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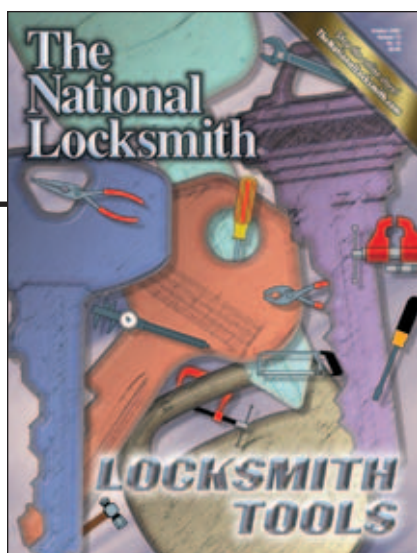
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LOCKSMITH TOOLS

On The Cover...



We locksmiths dearly love our tools. This issue explore some of the helpful devices designed to make your life easier.

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COMMENTARY



September 11, 2001... A day that will live in infamy

Dateline: September 12, 2001

Yesterday was a day of Tragedy for the United States of America, and in fact, for freedom loving people everywhere. Yesterday, people of every race, color, religion and creed were slaughtered.

These people all had one thing in common. They were in the United States. That alone qualified them for murder. Terror declared war on America yesterday in a cowardly sneak attack. America will respond. Of that I have no doubt.

Let us first give thanks to God that we live in a country ruled by law and justice and the principles of democracy and freedom. Let us not blame people of any one ethnic background or religion. Let us blame the people responsible for this act of brutality and let us hunt them down along with those who aid them, and let us kill them like dogs.

That is what one does during time of war. And make no mistake, this is war.

A civilized nation does not allow its citizens to run rampant into the streets to burn mosques or attack blameless people. A civilized nation pinpoints blame with care and diligence. Then it turns those people and their infrastructure into heaping mounds of steaming rubble.

War, by its very nature, is uncivilized. Yet civilized people are sometimes called upon to act in a violent manner. This is called self-defense, and while not pretty, it is justified and necessary.

Yesterday, I turned on the television before leaving for a flight to visit our client, Ilco. I saw the first tower on fire, and it chilled my blood.

I left for the airport, and listened to continuing developments on the radio. I shed tears thinking of those families ruptured by the attack of strangers with a conscious effort to destroy our morale.

As I got closer to the airport on September 11th, I realized I would not be boarding that flight. I turned back toward home, and like you, I watched the rest on television. Like you, my first feelings were of intense sadness. My morale was far from broken, but I felt a pain I cannot describe.

I recalled vividly how in the early 1970's the first World Trade Center was under construction. I remembered taking a parentally unauthorized train trip to New York. Entering the uncompleted building, no one challenged me or my friend.

The tower was only built to about the 70th floor, and in those days no security was on hand, nor was it needed. We boarded a deserted elevator, and took it as high as we could, to about the fiftieth floor.

Looking out the windows in the hall of this under construction behemoth, I was struck by the beauty of the view. It was a powerful moment. Perhaps I was all of 15 years old.

Now I have grown up. And we have all had a powerful moment with the towers, watching them fall into a pile of death.

The American people are highly fragmented. We come from different backgrounds, religions, even different countries. But I know what a Japanese admiral said upon the bombing of Pearl Harbor. And with all due respect to our Japanese friends, what he said was:

"I fear we have awakened a sleeping giant."

The great towers are gone in a heap of ashes, burning still as I write. But the giant spirit of the American people has only been rudely awakened.

It may take us a little while to shake the sleep from our bodies and minds. And when we do, it will be with a vengeance that we rebuild our towers, our Pentagon, our planes, our families, our society.

How many of us have watched Israeli citizens attacked on buses, markets, and on the street by suicide bombing fanatics? How many of us wondered if they didn't bring some of that on themselves? And how many of us thought that while it was terrible and tragic, it was also far from home?

Terror and tragedy came home yesterday. Faceless attackers used our own resources against us. Change will come along with these events. Greater security. More careful observation. More frequent interdiction.

These will be small sacrifices to make compared with those already made by what are sure to be thousands of the dead and dying.

Being strong does not mean never bleeding, never crying, never being afraid.

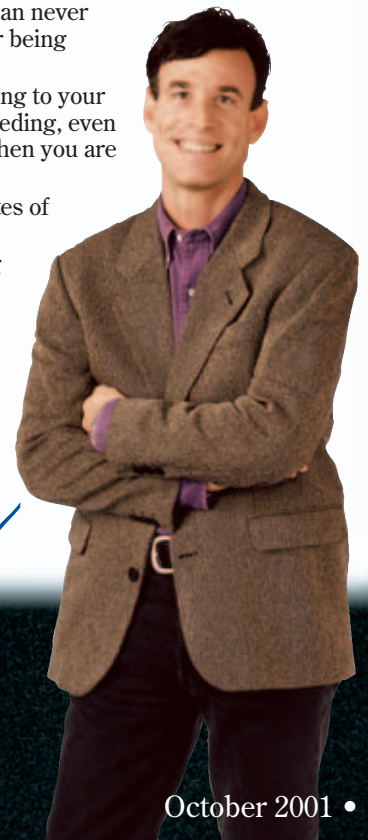
Being strong means holding to your ideals even when you are bleeding, even when you are crying, even when you are afraid.

God Bless the United States of America.

God Bless freedom loving people all over the world.

And God help the rest.
Vengeance is mine saith the Lord.

Marc Goldberg
Publisher



Have questions? Want free technical help?
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www.TheNationalLocksmith.com

Mango's Message

On August 3, 2001, Mosler Inc., announced that it would cease all operations and engage in an orderly liquidation of its assets.

The company said that it has been operating with a large debt burden for some time. Mosler faced a number of operational challenges related to the unsuccessful implementation of a new computer system and the integration of its acquisitions made over the last several years.

At the time, all of the approximately 1,800 Mosler employees have been terminated. The company has retained only a small core group of employees to assist in the liquidation process.

Mosler said that it explored a number of actions, including a sale of the company and various restructuring alternatives. Despite its best efforts, it was determined that an orderly liquidation of the business was its only alternative.

Chapter 11 Protection

On August 6, a few days after closing its doors, Mosler filed a voluntary petition for protection under Chapter 11 of the U.S. Bankruptcy Code in the U.S. Bankruptcy Court for the District of Delaware.

While under Chapter 11 protection, the company expects to initiate a process to sell substantially all of its assets, including real estate, machinery, inventory and equipment.

In a letter to its customers, Mosler said:

Dear Valued Customer:

As you are probably aware, the past few years at Mosler have been difficult as we worked to reduce our debt burden and address our operational challenges. Over the last year, we have diligently worked to sell our company and to pursue various structural alternatives, but unfortunately, our efforts have been unsuccessful. We have been left with no choice but to take dramatic action that impacts everyone associated with Mosler.

I regret to inform you that today Mosler has ceased its operations in order to engage in an orderly liquidation of our assets.

On behalf of the Mosler management team, we sincerely apologize for any negative impact this closing has on you and your operations. This outcome is clearly one that we worked very hard to avoid. Please be assured that we would not have undertaken this action if any other alternative had been available to us.

Our customers have been such a vital part of the Mosler heritage and of our security innovations during the Company's proud history. As heart breaking as it is to conclude our business on such a difficult note, the people of Mosler can at least extend to you a heartfelt "thank you" for your loyalty and your business over the years. And, as many of the Mosler men

A Fallen Icon

and women you have appreciated and worked closely with resurface throughout the industry, please welcome them back.

Sincerely,

David Artone

Chief Operating Officer

In a letter to its vendors, Mosler said basically the same thing with the addition of: *"Unfortunately, it is highly unlikely that we are able to pay any outstanding invoices on past goods and services. On behalf of the Mosler management team, we offer you and your organization our sincerest apologies for any adverse effect this action might have on your business. This outcome is clearly one that we had worked very hard to avoid. Please be assured that we would not have undertaken this action if any other alternative had been available to us."*

In a rapidly changing world, the demise of an old regime such as Mosler, may not come as such a surprise. But it is disheartening never the less. Mosler has a long and influential past.

The History of Mosler

Shortly after the Civil War, Gustav Mosler, an Austrian immigrant, saw the need to protect the records of the many fledgling businesses created by the emergence of the American Industrial Revolution.

In the Beginning:

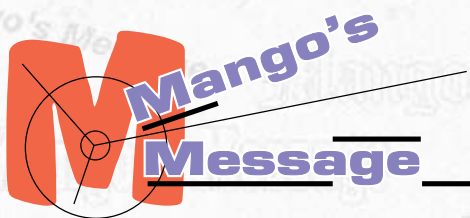
In 1867, he and a partner opened the Mosler-Bahmann Safe Company in Cincinnati, Ohio. Quickly the company's products became world famous for their quality and craftsmanship.

**Continued on
page 8.**



**Greg Mango
Editor**





Continued from page 6

In that era, Mosler safes were decorated in gold leaf with elaborate hand painted scenes, many painted by Gustav's son Henri.

By 1891, the company had outgrown its Cincinnati factory and relocated in nearby Hamilton, Ohio. This new location, chosen for its access to rail and barge travel, also offered nearby acreage for employee housing and schools for their children. Mosler corporate headquarters remain in Hamilton, Ohio.

The New Century:

Remarkable technical advancements characterized the company's progress into and throughout the 20th Century as America's security company. Mosler built the first fire-resistant safe.

A Mosler screw door bank safe set the burglar and fire proof standards of the time. Mosler was first to develop lighter, but stronger, manganese steel to replace heavy cast-iron safes and vaults.

In the early 1900's Mosler blended engineering and art to build mammoth, magnificent vault doors for the nation's most prestigious banks. Many of these doors are still in use today.

During World War I, Mosler contributed to the U.S. defense and offered the time of its very willing employees to manufacture gun carriages in its Hamilton factory.

This era brought another Mosler security innovation. During the late 1920's the Company introduced the first UL-listed Class A alarm system, making Mosler the first in the industry to market electronic security.

In 1932 at the World's Fair in St. Louis, Mosler displayed its most whimsical product to date — a tiny safe to hold George Washington's wooden false teeth.

As the popularity of the automobile turned America into a mobile society, Mosler responded by introducing the first drive-in banking system in the 1940's. Customer transactions were conducted at curbside by a teller who sat below street level peering through a submarine-type periscope called the Snorkel.

During World War II, Mosler once again cooperated with U.S. defense efforts to build Sherman tank turrets and warship steel assemblies.

The Nuclear Age

The beginning of the Nuclear Era created new and technologically challenging security demands. During this time, Mosler introduced special purpose doors designed to protect top-secret nuclear facilities against atomic bomb blasts or tornadoes.

Following the Second World War, an order from the Tennessee Valley Authority (TVA) led Mosler to the construction of an enormous vault door, the world's largest at the time. Built to hold back incredible dam water pressures, the door was several stories high, five feet thick, and weighed 125 tons. Despite its size, one person could swing open the door with one hand.

The unprecedented demand for new kinds of security during this period also allowed Mosler to enter into the

government security container business with the manufacture of products to protect the nation's classified documents. Until its closing, Mosler continued to lead the government security container business.

Protecting America's Legacies

In the 1950's the U.S. government turned to Mosler with a new challenge æ to design and build a custom safe to protect the nation's most valuable documents. The unique safe was to provide an attractive, accessible display offering the public a clear view of the Declaration of Independence, the Constitution and the Bill of Rights while safeguarding these priceless documents from fire, flood, attack, theft and vandalism.

Today this Mosler display is viewed annually by hundreds of thousands of liberty lovers at the National Archives in Washington, D.C. At the end of each day, or in case of emergency, a touch of a button initiates a "jack-in-the-box" action that retracts the precious documents safely into a 50-ton vault.

The New Age of Electronic Security

The proliferation of America's banking networks of the 1960's and 1970's prompted Mosler engineers to provide increasingly sophisticated alarm reporting, access control and monitoring systems that catapulted the company to a leadership position in electronic security.

It was Mosler security equipment that discovered listening devices concealed in the Great Seal of the U.S. at the American Embassy in Moscow during the Eisenhower administration.

As electronic security products further evolved with the advent of the computer, Mosler innovated alarm reporting and monitoring with Mosler COMSEC®, the industry's most advanced integrated security system. Mosler became responsible for helping major commercial and financial businesses maintain their corporate security networks with this remarkable technology.

The COMSEC Graphical Management Systems (GMS) provided open architecture capabilities with dynamic alarm monitoring, map display and integrated security management system control.

While the Mosler vault doors of today are contemporary using advanced, lighter materials, they still offer the protection of the mammoth doors made many decades ago.

As Willie Sutton, the famous bank robber of the Great Depression, once remarked as he attempted to break into a Mosler safe, "Mosler, you build one hell of a safe." His comment, no doubt, would be the same today.

In the End:

Just as Gustav promised to build a better safe, Mosler lived up to its pledge to "Secure the Future". Unfortunately, the future of Mosler has been determined. Long after the company is gone, Mosler safes and its legacy will live on.

Soon after Mosler ceased operations, ADT Security Services, Inc., a division of Tyco International Ltd., acquired the Mosler alarm and service accounts and re-hired many of the terminated Mosler employees.



OCTOBER 2001

Letters

The National Locksmith is interested in your view. We do reserve the right to edit for clarity and length.

Going Beyond the Call of Duty

I'm submitting this article that was in the local newspaper about my husband, Frank Garcia, who rescued an elderly woman after lying three days on the floor.

Cocoa, FL - An 84 year-old Cocoa woman who had fallen on the floor of her home and was unable to get up for three days. She was rescued Thursday afternoon after a neighbor called police. Mary H. Poyer was in stable condition Thursday evening and was being evaluated in the emergency room at Wuesthoff Hospital in Rockledge, a hospital spokesman said. Poyer was found about 2 p.m. on the floor of her home in the 1500 block of Clearlake Road after her neighbor, June Madden, called police. "I did some heavy-duty praying", Madden said. "I thanked him for giving me the instinct." Madden said she was leaving for work when she realized she had not seen Poyer for several days. Madden went to work and called Poyer on the phone, but got no answer. She then called a friend who knocked on

Poyer's door and got a faint response. Madden then called Cocoa police. Police said Poyer was injured and dehydrated. She had reached for something and fell out of her chair. She remained on the floor for at least three days, police said. "I think she may have hurt her hip," Madden said. Police got into the home with the help of locksmith Frank Garcia, who is often called to assist police. "This guy is a saint," Madden said of Garcia, who did not charge for his services. He often does not charge when someone is in trouble, police said. "It's just my way of helping out those who are in the same situation I may have been in the past," Garcia said. "It's just our way of returning some sort of community service."

Frank Garcia

956 N. Cocoa Blvd. Ste. 1105
Cocoa, FL 32922
(321) 632-7787

Editor's Note:

Many locksmiths around the country give freely of their time and expertise in times of crisis and in most cases, never receive recognition. So, as a way of saying "Thanks" to Frank Garcia, BWD has sent a selection of its Premium Pack locks. In light of all the locksmith efforts that go unrecognized, BWD wishes to extend this same offer of appreciation to locksmiths from around the US and Canada. Simply send in your (or a friend's) story of "Going Beyond the Call of Duty." On a monthly basis, BWD will award a set of Premium Pack locks (approximately \$100.00 in value) to one qualifying locksmith. So, hurry and send your story and is possible a photograph of the helping hand hero to:

Going Beyond the Call of Duty
c/o The National Locksmith
1533 Burgundy Parkway
Streamwood, IL 60107
Fax: (630) 837-2044
E-mail: natllock@aol.com



Locksmith Cook Book

I am in the process of putting together a cookbook for the Texas Locksmiths Association (TLA). Proceeds from the sale will go either to the Legislative Fund or the Scholarship Fund. I hope to have the book ready for Christmas sales so am rather pressed on time and short on recipes.

I had hoped to compile this book completely with recipes from the TLA members, but need to seek other sources as well. If you have any recipes please send them to me A.S.A.P. Be sure to include your name so I can give you credit in the book for your contribution(s). You can send as many as you like.

Send all recipes to:

Judy Clifford
P.O. Box 217
Lake Jackson, TX 77566
Fax: (979) 297-1483
E-mail: Anchor@Swbell.net

Thanks.
Judy Clifford
Texas

The National Locksmith
1533 Burgundy Parkway
Streamwood, IL 60107
Attn: Editor

LOCKSMITH Tools

Clichés can be so mundane. However, there are a few that have withstood the test of time. One of them is: The right tool for the job makes all the difference in the world. It's an old saying, but it couldn't be truer. Besides knowledge, the most important weapon in any locksmith's arsenal is tools. You can never have enough, let alone too many.

It doesn't matter what you do, if you're doing it with the wrong tool, you're making life much more difficult than it needs to be. Tools are designed to not only make life and the job you are doing easier, but safer and faster as well. Don't short-change yourself. Get the tools you need and live happily ever after. You will never regret it.

A-1 VATS & PATS Keys

A-1 Security Manufacturing Corp. now offers its line of high security Somerset key blanks. Somerset offers single and double-sided VATS keys and Ford PATS.



The Somerset Vats keys are replicas of the original and are manufactured under license from Strattec Security Corp.

Limited supplies of Free VATS keys are available.

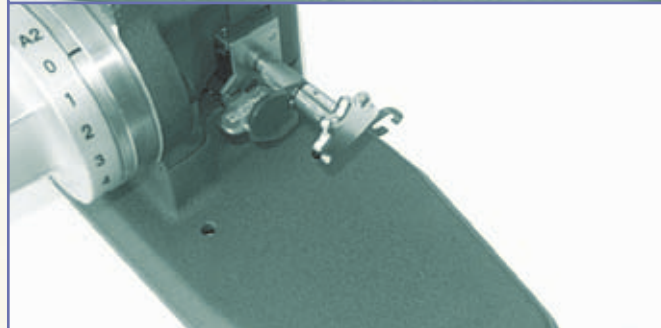
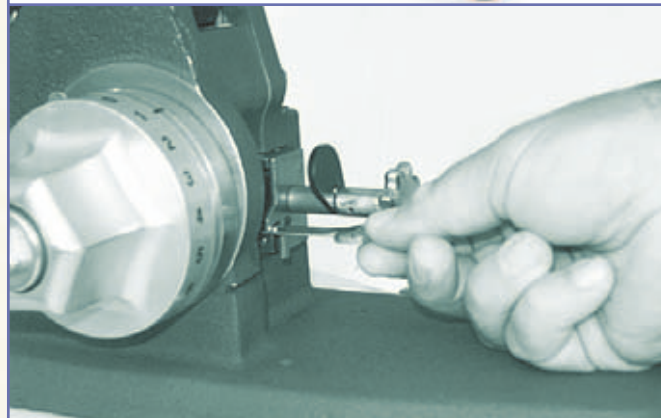
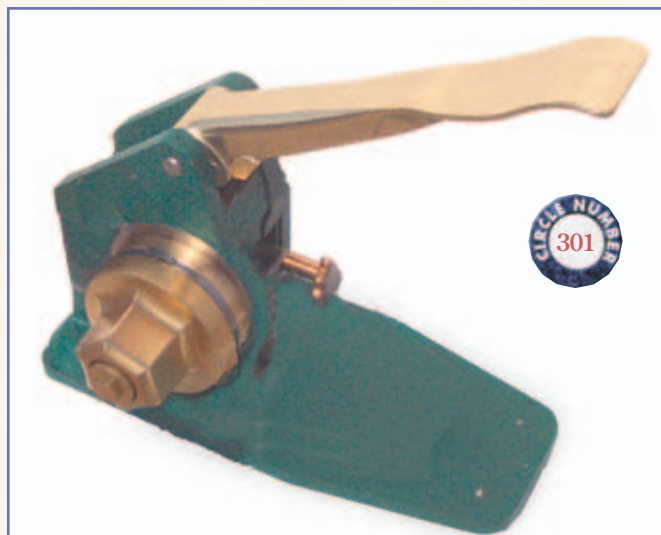
A-1 Key Combinator

A-1 Security Manufacturing has recently introduced a new, heavy-duty key combinator designed exclusively for SFIC (small format interchangeable core). The original "Best" keypunch was the inspiration behind A-1's Mean Green Machine. Because the machine is created specifically for I/core, it is designed to hold the tighter tolerances that SFIC demands.

The keypunch will punch SFIC keys for Arrow, Best, Falcon, KSP, and other standard SFIC.

The punch features interchangeable vise assemblies, allowing it to punch specialty SFIC keys, such as Arrow's Flexcore. According to A-1, additional specialty vises will be added in the near future.

The machine features a large, strategically located depth knob on the left-hand side and a paddle style punch actuator



(handle). This combination allows for fast and easy key generation. Keys load quickly from the front of the vise assembly and are secured by a heavy-duty pressure plate.

AABLE Ford Quick-On Ignition Removal Kit

The Quick-On will allow you to turn all Ford 10 cut ignition cylinders to the on position in less than 60 seconds, without any damage to the housing. The Quick-On works on all Ford, Lincoln and Mercury locks. It is made of hardened tool steel. The guide key has a built in steel ball bearing, which locks into the detent hole in the sidewall of the tool. When the bearing drops into the detent hole, the key will hit the tool into the face of the lock. This enables you to locate the exact location where the two cutting tabs will cut into the face of the lock. There is only one location where these tabs can penetrate the face of the lock, there by allowing you to get the torque power you need to turn the cylinder to the on position, while shearing the sidebar. Just push in the retaining pin, the lock will slide out, and then replace it with a new one. Fast, clean, easy. Complete step by step instructions with photos.



AABLE GM Persuader

The GM Persuader was designed to turn the trunk lock when the retainer has come loose. However, it was found that it would also open the trunk when the key is inside or lost. The tool is designed to fit snugly into the lock cavity, enabling you to slowly turn the cylinder just enough to pop open the trunk, without any damage to the lock or car.



Use the Persuader and open the trunk, then just fit the key as you would to the door. Instead of it being a 45-minute job, it will now only take about 15 minutes and you will have a key to the doors and trunk. The tool is made of hardened tool steel to last a lifetime.

ESP Mobile Pinning Station

The Mobile Pinning Station from ESP includes a durable Corian base with 11 pockets for holding pins. A foam pad and a mini locksmith vice mounted to the base, make for a solid working surface. The unit can be used in the shop or on the road.



Framon's Impressioning Tool

Framon's Impressioning Tool has long been a favorite among locksmiths. If you're new to Impressioning or an old hand, you'll appreciate the tools' ease of use. The jaw contains two preset screws, which will clamp almost any key in use today. Simply turn the base of the handle to tighten the key. There is no need to tighten the screws each time you insert or remove a key blank. The tool keeps pressure along the centerline of the key, which reduces key breakage.



Framon's Plug Vise Set

Framon's Plug Vise set is adaptable for plugs from .480" to .550" diameter. These vises can be hand held or secured in a bench vise. Only two vises are needed to hold almost any non-I/C plug in use today. Plugs, when loaded, will rotate in the vises in the same manner as in the cylinder shell. The vise can be adjusted to any tension. The key blank will not drop below the radius of the plug so the shear line can be maintained. High pins will show up when the plug is rotated in the vise.



Gator Tool Multi-Purpose Facecap Tool

Gator Tools is manufacturing a new innovative tool to remove and replace automotive facecaps. The Multi-purpose Facecap Tool will remove a facecap from the lock housing with very minimal damage and the same facecap can be reused after the repairs have been made to the lock. This tool has a specially designed hardened tip and saddle, and is fully adjustable to accommodate most any size of facecaps.



It requires a minimum amount of adjusting to give a professional look after reinstallation of the facecap. The

Multi-purpose Facecap Tool is a hearty tool, with a durable finish to resist weather. The installed torsion spring helps open the tool, making the tool a breeze to use. The tip is made of hardened material for long wear, but if broken can be replaced. It comes with a limited warranty.

Gator Tool Wafer Popper



The “Wafer Popper” developed by Gator Tool Company, is new this year. We developed this tool to help in the wafer removal process. Like many times in locksmithing, removal of stuck or peened wafers from cam locks can be time consuming or damaging to the lock. This tool works so well, we fit a slogan to match the speed, “Click...Click...Click...It’s just that quick”.

The tool is fashioned to appear as a pair of pliers with a funny little tooth sticking out from the jaws. The jaws are offset in a fashion to avoid contact with the wafer as the tooth pushes the peened wafer through the lock core with minimal amount a pressure. The tool can do the standard locks or the offset wafer equally as well. The handles are cushioned for comfort, with a torsion spring for one handed use and plated for weather and durability.

GKL Hole Saw Alignment Guide



How do you re-drill a door that won’t accept a drill fixture? The Hole Saw Alignment Guide solves this problem. This Guide is fast and easy to use and



eliminates the set-up time to put a drill fixture on a door. You can drill twenty doors using the Guide in the time it would take you to put a drill fixture on five doors.

The Guide is made of steel. It’s the only tool you’ll need to make a 2-1/8” hole fit where a 1-1/2” hole was.

GKL Hinge Doctor

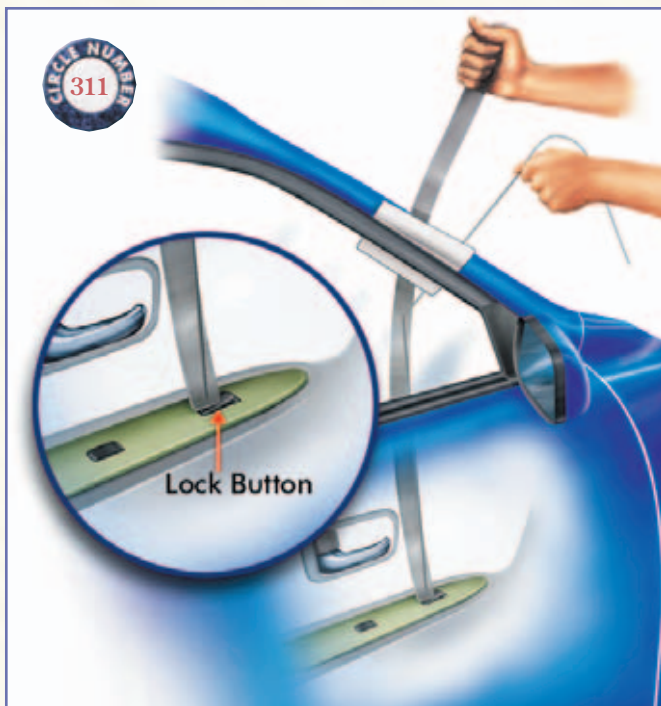


Did you ever have to file a door strike because the latch is suddenly below the strike hole? Or the top of the door is hitting the doorframe? Well put away that file and you won’t need to remove the hinge to bend it back in your vise either. Just use the new “Hinge Doctor” tool. It will fix that sagging door in a minute, in just two easy steps. Just slide the tool over the hinge while the door is closed, hold it there with one hand while you open the door with your other hand. The

door will start to bind and will feel springy, continue pulling the door open another few inches or so. At this point, if it’s a hollow metal door, you’re realigning the hinge mounting plate, or if it’s a wood door, the hinge will start bending back to its original shape.

High Tech Tools Power Push Tool

The High Tech Power Push Tool is designed to open vehicles with cabled linkages that have little or no room to insert an inside access (under window) tool. The Power



Push tool slips in between the door-frame and the car body. Using a special shield, the tool can be in-serted without bending or prying the door. Once inside the vehicle, special control cables allow the tip of the tool to move, to push the electric door lock button.

High Tech Glass Master

High Tech Tools® Glass Master is designed to unlock vehicles with frameless windows. With the special Glass



Continued on page 16

Continued from page 14

master wedge, locksmiths can create a gap between the door glass and frame. Spreaders provide for additional working room to insert the special long reach tool and unlock the vehicle.

HPC's Pocket Size Decoder

HPC's Pocket Size Decoder Kit determines the original factory depths of most popular domestic pin and disc tumbler cylinder and automotive keys. It is ideally suited for giving the correct bottom pin size when re-keying new or worn cylinders. It is also an effective timesaver when used along with precision color pin assortments or when using original pins. Simply insert the correct information card into the top slot of the decoder. Lowering the depth pin into each cut, from bow to tip, will indicate the correct depths in the window at the top. The pivoting depth pin allows for easy decoding of Medeco® angles. Each of the 2" x 4" (5 x 10cm) information cards also lists the manufacturers depth and space specifications.



The HPC's HKD-75 comes complete with a handy plastic carrying case, 3 shims, and 111 information cards.

HPC's Flip-It™

HPC's Flip-It™ (No. FIT-2) is the perfect tool when picking a lock in the wrong direction (intentionally or by error) the Flip-It™ will rapidly flip the cylinder plug past the upper pins and save you the job of re-picking. It also works equally well on disc tumbler locks.

HPC's Flip-It™ comes with many exclusive features. The 2-Pin Quick Lock/Release feature allows for easy release of the rotating action. The sure stop feature prevents over-winding in either direction. The ergonomic design of the knurled knobs make it easy to



pre-load the tools spring action. Once the spring action is set, the Flip-It™ will flip the cylinder plug with the push of a thumb.

Multi-Tool Kits - Small Package, Big Capabilities

A tool kit that performs a wide variety of functions, yet fits in your pocket or hangs from your belt? Yes! Two versatile multi-tool kits are now available.

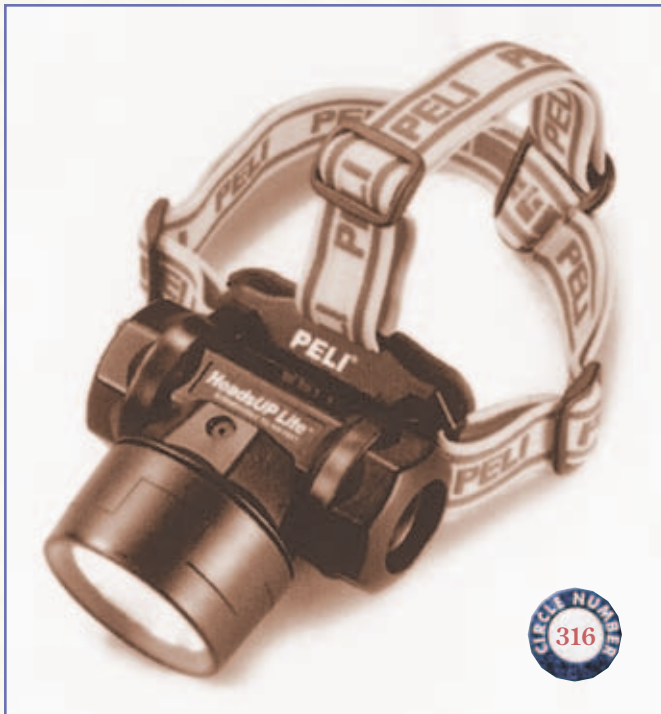
The Multi-Tool I Kit starts off with the SOG® Paratool - needle nose pliers, wire cutter, 3" straight point blade, 3" serrated sheepfoot blade, 3 flathead screwdrivers, Phillips #1 screwdriver, can/bottle opener, awl, file (fine, coarse edge cut), thumb tab/lanyard hole and measuring scale.



The Multi-Tool II Lit begins with the MultiMaster™ Tool (with safety lock features) - pliers with cutter, coarse/fine file, serrated sheepfoot blade, saw blade, clip point blade, can/bottle opener and inch/metric ruler. Plus you get all this: a Mini Maglite, nine 1/4" sockets from 3/16" to 1/2", two slotted and two Phillips 1/4" hex bits, a 3" extension, a 1/4" hex to 1/4" square adapter and a 1/4" hex mini-ratchet.

Jensen Tools Heads Up Lite®

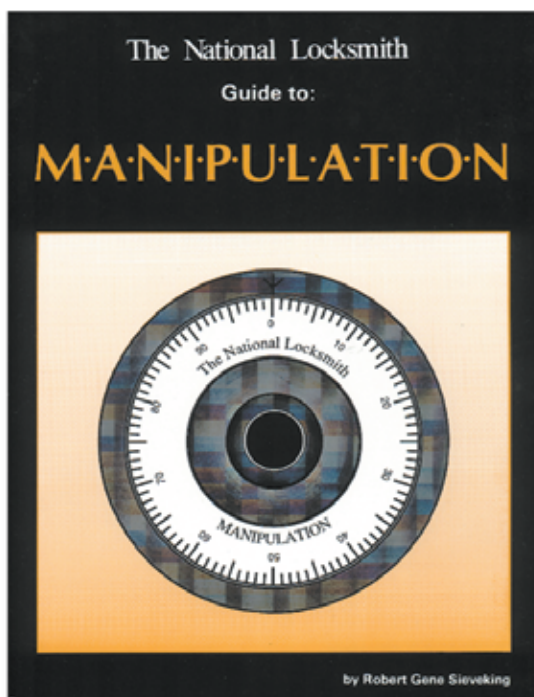
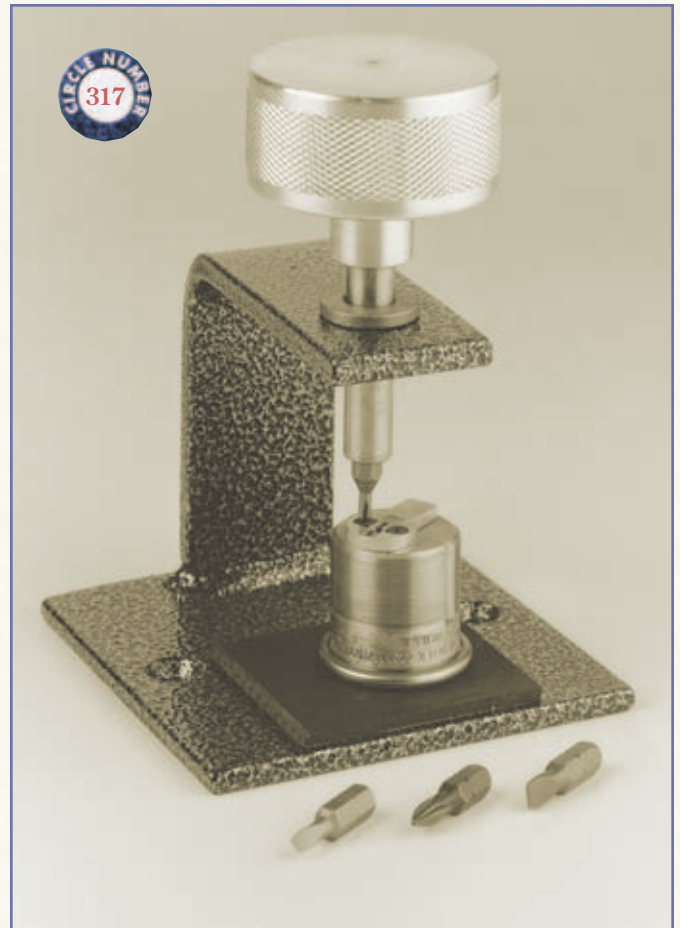
The Heads Up Lite, from Jensen Tools, has two krypton lamps. One is high intensity, and one is low intensity for extended burn time. The headlamp has an adjustable beam, a large on/off switch, and is watertight up to 500'. It's



constructed of corrosion-proof ABS polymer, has a comfortable forehead pad and a cloth elastic headband to fasten securely to head or hats.

Keedex "Spin-Out" Screwdriver

How many times have you struggled, trying to remove the cam screws on mortise cylinders? The "Spin-Out" by



Manipulation Home Study Course

Our home study course guides you on step-by-step process, teaching you everything there is to know about manipulation.

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#MAN - 1

Keedex is specially designed to remove even the most stubborn screws.

The “Spin-Out” Features a screwdriver with an oversized handle for extra torque. The “Spin-Out” ships out with four sizes of interchangeable screwdriver bits, two slotted and two Phillips.

Also included is a stand with bronze bearing, to prevent the screwdriver from slipping. The “Spin-Out” will allow you to remove even the most stubborn screws.

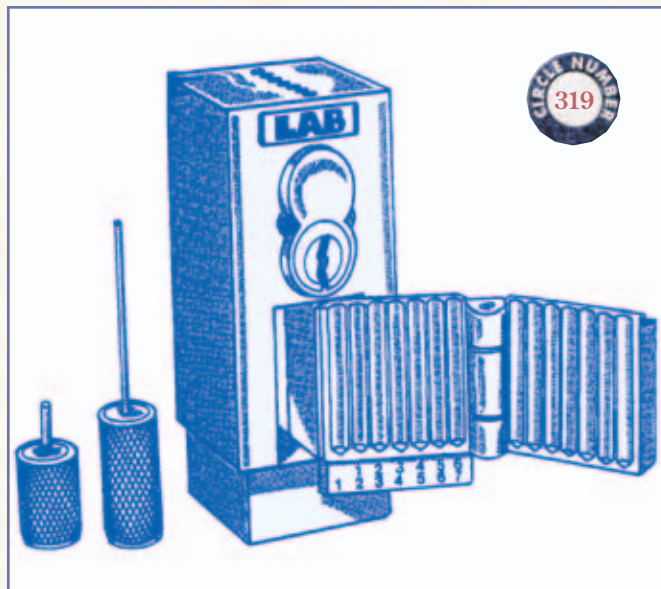
Keedex Tamper Resistant Screwdriver

The Keedex Tamper Resistant Screwdriver comes with eleven interchangeable tips. It includes the following: Six tamper resistant torx tips (T10, T15, T20, T25, T27, & T30), three tamper resistant hex tips (5/32”, 3/16” & 8/32”), and two spanner tips (#6 & #8). All of the tips fit into the screwdriver’s storage handle. The Keedex Tamper Resistant Screwdriver is invaluable for automotive work, access control, commercial and institutional locksmithing. Keedex is also now stocking many different styles and sizes of tamper-resistant fasteners, appropriate for the needs of security professionals.



LAB I/C Tool

The LAB Interchangeable Core Annex offers the simplest method for the loading and unloading of interchangeable core pins, spring and caps, using only one instrument for both functions. A second time saving feature is a Slideout Code Book below the area where the core is slid in place. This allows the user to unload the



core pins, springs and caps into a confined area without spilling parts in or around the work area. The Slideout Code Book is also used to determine the bitting of the control key when it is not available and also determine the top master key bitting.

Lockmasters Mini Scope

The new mini scope is perfect for the inspection of locks in safes. If you are looking for a quality product for those small jobs this scope is the one. The power handle operates from two AA batteries and is compact and lightweight. The scope is supplied with one 90-degree mirror probe with a working length for thin safe doors. Batteries not included.

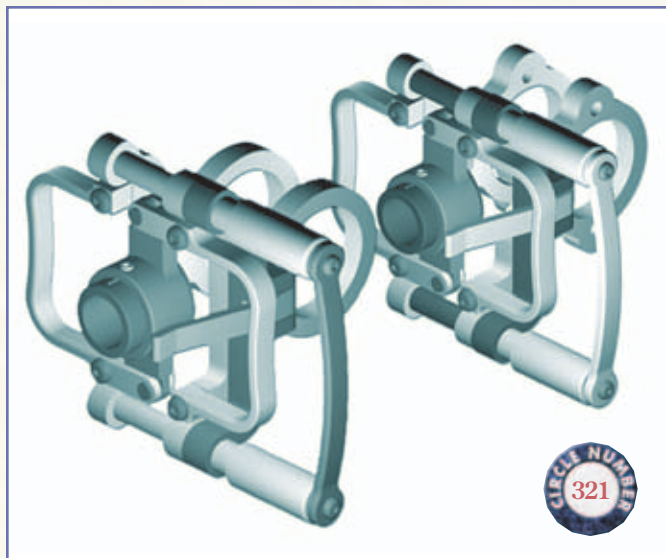


LockTools Wild Jig

The Wild Jig from LockTools.com, is a self-adjusting jig for installing all cylindrical locks and deadbolts on wood or metal doors, ranging from 1-1/4” to 2-1/4” thick. The Wild Jig 1 is designed to drill 2-1/8” and 1” holes that are required for the installation of most cylindrical locks and deadbolts. The Wild Jig 2 has the same features, but in addition, it allows the installer to also drill the holes for through-bolts that are required for installation of many common locks, such as Schlage,

Continued on page 22

Continued from page 18



Medeco, PDQ and more. Both jigs are made from steel and use no clamps or spacing plates. They are completely self-adjusting, automatically centering the latch hole.

Lynch-It Automotive Drill Guide



Ignition lock removal has never been so easy. Quickly locate and remove the retainer pin on the most common import vehicles including Toyota, Isuzu, Mitsubishi and more. The L2034 Lynch-It drill guide easily aligns the drill point for gaining access to each lock's retainer. Using Lockmasters' Mr. Twister hard plate rated drill bits, or standard 3/16" high-speed drill bits, quickly drills and removes the lock's retainer. As an added feature, the L2034 can also be used to drill many common commercial rim and mortise cylinders, including Medeco, and Mul-T-Lock,.

Major HIT-106

The HIT-106 was developed specifically for quick and accurate installation of Unican's SolitairePROX. Each HIT-



106 unit comes equipped with hardened drill bushings on both front and back plates, to allow drilling from either side of the door. The template is able to accommodate doors up to 2" thick and thru-bolts to the door by utilizing the existing 2-1/8" crossbore for alignment.

Major HIT-101

The HIT-101 is a fantastic way to save time and insures a clean installation of Unican's 6000 series pushbutton lock. Each HIT-101 unit comes equipped with hardened drill bushings, on both front and back plates, to allow drilling from either side of the door.

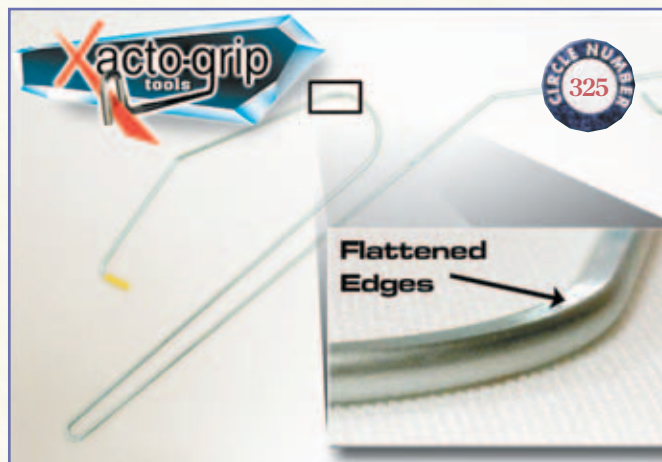


The template is able to accommodate doors up to 2" thick and thru-bolts to the door by utilizing the existing 2-1/8" cross bore for alignment.

PRO-LOK's New Car Opening Tools

PRO-LOK has introduced a revolutionary new design in car opening tools. The shape of car opening tools will never be the same again! The new design solves two major problems with car opening tools.

Problem #1: Tools that slide and slip along the linkage. This problem has been resolved by knurling the end of the tool that makes contact with the rod. This textured surface



Continued from page 22

makes it easier to maneuver the linkage, as opposed to slipping or sliding along the linkage. Less strength is required to maneuver the linkage.

Problem #2: Tools are either too big or too weak. Starting with a larger diameter wire, and then flattening two sides and heat-treating the wire to create the slimmest, yet strongest wire tools available, have resolved this problem.

Slide Lock Z-Tool System

A fully researched, completely organized kit, using only 10 tools backed up with a proven manual, make the history of lockout situations very easy to master. The famous Z-Tool (with depth guides) is known for its ability to eliminate the need to juggle over 30 tools from the 1970's, 80's, and 90's. Its sister, the Inverted Z-Tool, will allow you to open those extra tough models built in the 90's and up, configured with elusive targets within the door cavities. Together, they are assigned to handle 70% of all opening situations allowing a lightning fast learning curve due to their repeated use.

The other 8 tools in the system are known as easy, one-time learners classified as non-door cavity tooling. They are often assigned to the expensive, high security models that cannot or should not be opened within the door cavity.

The integrity of this easy-to-follow system is the when, where and how-to manual which organizes and assigns each of the 10 tools for each particular model. The important system manual now details the history of vehicles on over 1000 cars, trucks, vans and now SUV's from the 1950's right up to the newest showroom models.



Simply look up the vehicle in the extensive alphabetized index and refer to its assigned tool and corresponding opening method. It's organized to keep it simple!

TNL



Wafer Lock Reading

Easy to learn.
No Codes needed.

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#WLR - 1

The Lockmasters EVOLUTION

by Jake Jakubowski



When you are already very, very good at what you do, improving on what you do, or becoming very, very good at doing more than what you already do — takes a certain amount of wheel reinventing. Lockmasters is doing just that... reinventing their wheel, so to speak.

This is not going to be another article on Harry Miller's successes, Lockmasters safe classes and safe tools, or the Harry C. Miller Lock Collection, even though any one of those subjects would make a great article and fun reading. What this article is about is how Lockmasters is fast becoming the locksmith's tool supplier. Not just safe tools, but locksmith tools.

Someone once said that there is nothing new under the sun. Whoever said that had no concept of the technological advances that would occur in the later half of the Twentieth Century and the beginning of the Twenty-first century. Most definitely, that sage could not foresee the changes (especially in the last fifteen years, or so) in the locksmith industry!

When it comes to Lockmasters reinventing their own wheel — the statement about there being nothing new under the sun, is definitely in the Famous Last Words category.

Why? Because today, Lockmasters is not only very good at doing what they've always done; they're very good at responding to the unique market needs of locksmiths and not just safe technicians. They are doing this by quickly positioning themselves as the up and coming, all-purpose locksmith tool supplier with a rapidly expanding tool inventory.

One of the more notable tools acquired by Lockmasters recently is the LYNCH-IT tool. (See *photograph 1.*) Tom Lynch developed the tool and Lockmasters debuted the LYNCH-IT at the ALOA Security Expo this past July in Baltimore. It was an immediate success!

1. The LYNCH-IT tool.



Although the LYNCH-IT was originally conceived as a drill guide to make Toyota and other foreign care ignitions simpler to remove, the LYNCH-IT has proven effective at simplifying the removal of a number of lock cylinders. It is effective on mortise cylinders (by drilling off the retaining screw), rim cylinders, by aiding in drilling out the mounting screws and American padlocks. By aligning the drill guide (see *photograph 2*) over the hardened cylinder retainer and using a carbide bit, the hardened post can be removed.

With the LYNCH-IT in position on an ignition lock, the face of the lock is penetrated at the position of the lock's retainer, as seen in *photograph 3*. The drill bit is then driven into the cylinder to drill out the retainer allowing the lock to be removed. (See *photograph 4.*)

The LYNCH-IT can even be used to drill out the retaining screws on mortise cylinders such as a Medeco cylinder. (See *photograph 5.*)

In keeping with their wheel re-invention program, Mark Miller and his staff jumped on the LYNCH-IT concept because they recognized the wide-ranging applications of



2. Cut out is to allow face to rotate to proper calibration for lock.

3. Hole drilled in face of ignition lock.



Continued from page 26

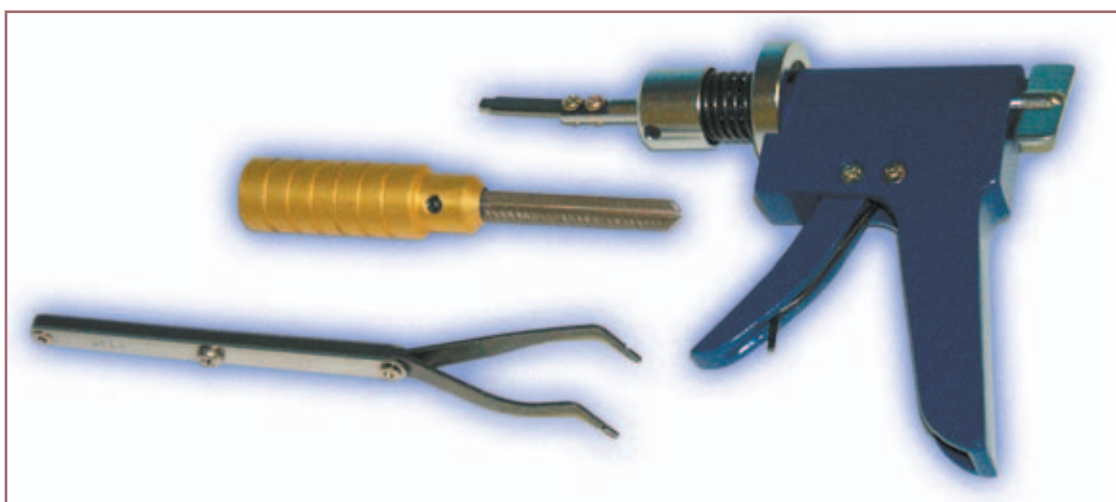
4. Drill bit headed for the retaining pin.



5. Medeco rim cylinder with retaining screws drilled out.



6. Lockmasters Flip Pick for opening deadlocked BMW's.



this unusual tool and the benefits that would accrue to the locksmiths who bought it.

In their quest to be on the cutting edge of lock tool technology, Lockmasters is devoting a lot of resources to seeking out and finding the unique, the unusual, the different and most practical tools being developed. Yet, in keeping with tradition, Lockmasters' progressive nature is solidly rooted in the principles developed by Harry Miller many decades ago. The adherence to tradition and the acceptance of new technology and desire to address wider market arenas is reflected in their ability to recognize the many high-tech problems today's locksmiths encounter.

Helping locksmiths deal with transponder security best exemplifies this characteristic, and was Lockmasters first step in their evolution into the automotive market. In just a few short years, Lockmasters has developed one of the most extensive automotive and locksmith tool and product lines for working with transponder equipped vehicles, as well as more standard locksmith tools.

Notwithstanding, Mark Miller recognized that an inventory of tools was just part of the answer to repositioning Lockmasters as a well recognized authority (just like they had become with safes, safe tools and training classes) in this new playing field—general and automotive locksmith tools.

Taking a page out of Lockmasters past successes as not only tool suppliers, but also educators, Mark Miller realized that tools without the knowledge to use them would make Lockmasters simply another tool distributor. That scenario would leave the locksmith with more questions than answers. To complete the tools + education + knowledge competency circle; Lockmasters employs, consults with, and encourages development of their

new programs and tool research and development agendas, with some of the top automotive locksmiths, and locksmith talent in this country and from abroad.

Randy Mize, automotive locksmith and inventor of the BMW High-Security Flip Pick, brings expertise in transponder and high-security automotive tools.

Tom Seroogy, former Managing Editor of *The National Locksmith* and the founding Managing Editor of The National Locksmith Automobile Association, heads up Lockmasters automotive education and tool development programs.

Tom Lynch and dozens of other "working" locksmiths have developed tools, ideas and class material currently being used by Lockmasters to further their vision of re-inventing their particular wheel.

Lockmasters has complemented their automotive and locksmith tool focus by adding the automotive lock, key and service kit products of STRATTEC, ASP and BWD. Lockmasters has positioned themselves to provide all locksmiths with the technical expertise, products and product knowledge (including proper utilization of those tools, etc.) they require. This new package of Lockmasters contains the tools, products and accurate information that will enable any locksmith to compete in today's increasingly complex and highly technical markets without losing sight of the basics and their need for effective, workable everyday tools.

Let's take a look at some of the more esoteric automotive tools that Lockmasters has brought to the market.

Invented by Randy Mize, the Flip Pick will open a deadlocked BMW in a matter of seconds! (See photograph 6.) While I was at Lockmasters, Tom Seroogy and I opened



7. The SKT Wafer Reading tool completely assembled.

deadlocked BMW locks after about five minutes worth of instruction! The tool is fast, effective and worth its weight in gold to the locksmith that is called on to open Beemers.

Lockmasters SKT tool for reading wafer locks, such as automotive, desk or cam lock styles. (See *photograph 7.*) I was intrigued by this too and wanted to try it out for myself. I found an Ilco key locking combination lock dial to put it to the test. First the SKT tool is inserted into the keyway. (See *photograph 8.*) At the end of the SKT tool is a small ink pen tip that is designed to trace the actual wafer silhouette pattern on a ribbon of paper. (See *photograph 9.*) As the SKT tool is slowly withdrawn from the keyway, the cuts of the key are traced and revealed. (See *photograph 10.*) It's quite a clever design.

Continued on page 31



8. The SKT tool is used to read the wafers.



How To Create Master Key Systems

Never has there been a more concise, easier to understand program to teach Master Keying.

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#HT - CMK1

Continued from page 29

It may look a little strange at first, but after a little practice you can use the tool and read the graphs like a pro.

As another example, the SKT tool was used in the door lock of a Ford 8-cut vehicle. (See photograph 11.) After following the same process, the locks wafer pattern is traced. (See photograph 12.) The cuts are from the tip to bow: X-X-1-4-2-3-3-2! The X's

are the last two cuts of the key that do not appear in the door lock. Knowing the Ford 8-cut system doesn't allow a 1 cut next to a 4 cut, we finished off by impressioning the key. Our actual cuts from the tip were: X-X-3-4-2-3-3-2.

After a little practice I found that the SKT tool would yield very good readings. I was impressed with the variety of

9. The "pen" that marks the paper with the depths of the wafers.



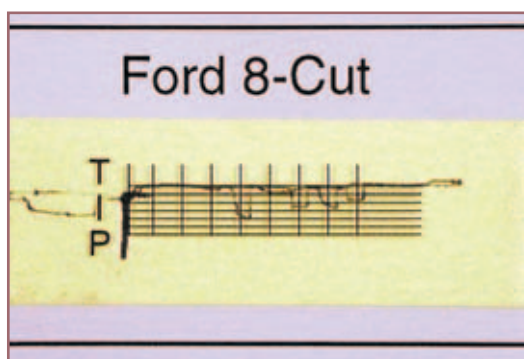
10. The paper with the wafer depths outlined.



11. The SKT tool in a Ford 8-cut door lock.



12. Actual graph of Ford lock.



NLAA One Year Membership



The big problem in automotive locksmithing is the tremendous amount of information you need to have at your fingertips.

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13. Lockmasters All-In-One tool.



wafer locks the SKT tool would read without the necessity of changing anything other than the reader paper on the tool.

Another new tool that Lockmasters has that I thought was rather different was their All-In-One Tool. (See photograph 13.) This tool is designed to help the locksmith rekey all standard door locks quickly and easily. The All-In-One Tool works on Lori cylinders, Adams Rite locks, key-in-knob retainers, removes auto face caps, adjusts door closers, eases service for Russwin, Corbin, Baldwin, Schlage deadbolts, and removes Medeco cap screws. Wait, there's more. This one versatile tool contains regular pliers, needle nose pliers, wire cutters, small and straight stet screw tool, Phillips, and regular screwdriver, hex keys, spanner wrench and a long 3/32" hex for Lori deadbolts! And that's just ONE tool! What more could you need?

What else is the reinvented Lockmasters carrying?

Transponders, transponder keys blanks, transponder software, and transponder detectors. Key machines, Pak-A-Punch machines, Code machines, code programs. , master

keying programs, pinning kits, pin kit refill packs, files, impressioning pliers, screwdrivers, UV impressioning aids, picks, tap and die sets, drill guides, pullers, spinners, spanners, key decoders, tamper resistant screw kits, Petersen picks. Bypass tools, books, car opening tools and more, much more! In fact, the foregoing list is only a taste of what's on Lockmasters plate.

And, that list doesn't cover Lockmasters traditional safe tools, books, classes, manipulators and safe bypass tools.

That list also doesn't cover some new and exciting tools that are coming down the pipeline. Tools like a bypass tool that opens a locked narrow stile door by turning the thumb turn from the outside! Nor, does it include probably a dozen other great locksmith gadgets that Lockmasters will be offering in their new catalog!

Mark Miller told me that he wanted to make Lockmasters "The Snap-On of the locksmith industry." If enthusiasm, hard work and dedication will help them obtain that goal; then Lockmasters is headed in the right direction. Especially, since they have blended their traditional ideas of great customer service, education and a commitment to doing what they do best... serve the locksmith industry.

I've been there, I've seen the programs, I've seen the tools and I was even fortunate enough to get a glimpse of a little of what's on the horizon. I have no doubt that Lockmasters will achieve their goals. For more information on Lockmasters products, services, educational programs or a free catalog, contact them at: 800-654-0637; Web: www.lockmasters.com. If they don't have what you are looking for, they can probably get it. If they can't get it, they can certainly tell you where you can. And while you've got 'em on the phone, tell 'em "Jake told me to call!" **TNL**

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To make big profits
in safe work with no
hassles...you need
information!

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2001 Oldsmobile Aurora Ignition



Part 2

The conclusion of this ignition removal headache.

by Michael Hyde & Allan Morgan



After you have removed the dash panel you can see how large of an area it covers over the dashboard.



The radio and heater control unit must be removed to gain access to the ignition lock retainer.



You probably won't believe this, but you are not done. There's more to dismantle because you can't get to the active retainer to depress it without more dismantling.



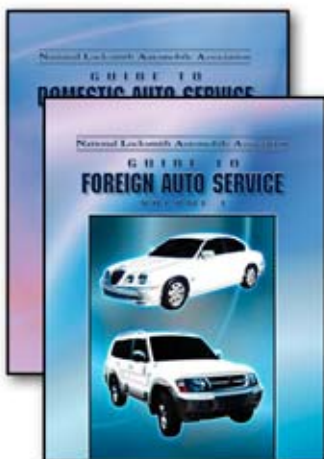
The radio will pull straight out. Four metal spring clips hold it in, two on each side.



There are four black plastic clips that hold in the heater control unit. Squeeze the plastic clips together individually to release the heater control unit.

NLAA Guide to Domestic Auto Service

NLAA Guide to Foreign Auto Service



You get car opening, lock removal and service, column service, key and code series information, and many views of the doors, panels and locks.

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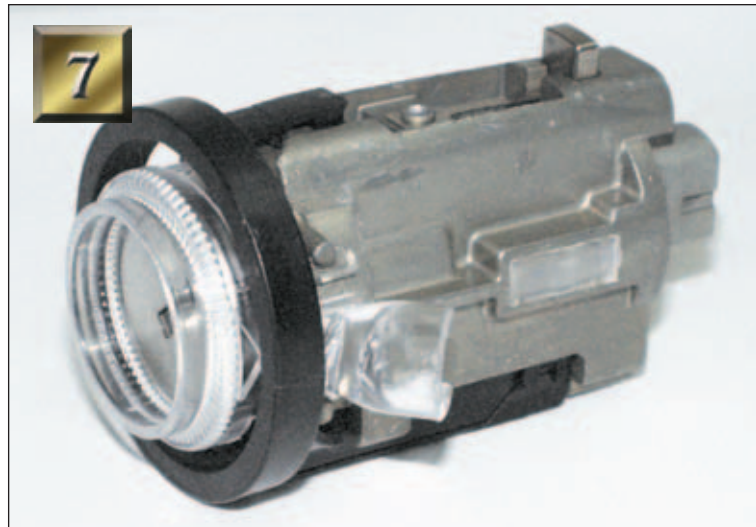
Now that you have removed the fuse door, lower drivers dash panel, drivers side vent, center dash upper trim, instrument cluster trim, main dash panel, radio, and heater control unit, you can get to the ignition lock retainer. Reach in where the radio use to be to gain access to the side of the ignition lock and depress the retainer. This lock has an active retainer meaning you need a working key turned to the "On" position.



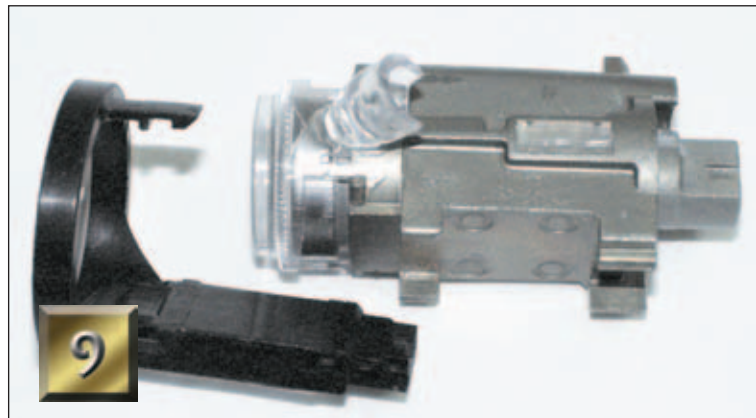
As you turn the ignition lock on its side, you can see the PASS-KEY® III module attach to the cylinder housing.



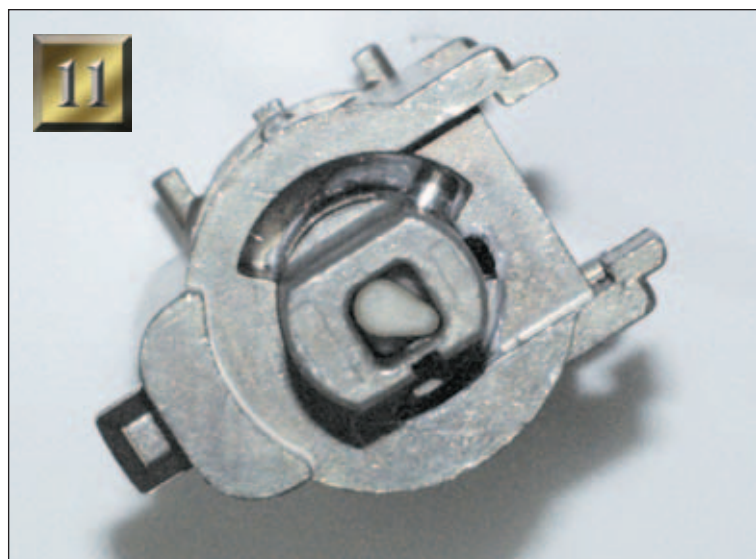
The next thing to do is remove the clear plastic illumination ring.



Here's the ignition lock removed from car with the illumination ring and transponder coil antenna.



The PASS-KEY® III module can unsnap and slide off to be removed.



To remove the cylinder plug you will need a working key or pick the lock. There is a detent pin on the rear side of the lock that must be depressed. Rotate the plug until it lines up with the ward in the cylinder and then you can slide out the cylinder plug.

When you slide out the cylinder plug watch out for the detent pin to fly out and either get lost or hit you in the eye.



13



There are seven tumblers in the ignition lock cylinder plug. More important is that there is no sidebar in this lock. That's right, no sidebar.



Since this car has an active transponder system you will need a transponder key. The factory key has a "PK3" stamped on the blade. The aftermarket replacement blank is an ILCO B99-PT or a JET B99-PHT. If you want to clone these with a cloning machine, you would need ILCO B99-PT5 or a JET B99-N-PHT. Never try to use a cloning key blank to do any On-Board programming.

15

PROGRAMMING INSTRUCTIONS FOR TRANSPONDER KEY:

(No other working key for the car is available. This method will erase all other programmed keys.)

1. Put the newly cut Master key into the keyway and turn it to the "ON" (RUN) position. A "Security" indicator light on the dashboard will light or flash for 10 minutes. (Do not use a Valet key for this procedure, it will not work).
2. Within 1 minute after the indicator light goes out, turn the ignition to "OFF", (DO NOT REMOVE THE KEY) and then turn the key to the "ON" (RUN) position. The indicator light will light or flash for another 10 minutes.
3. Within 1 minute after the indicator light goes out, turn the ignition to "OFF", (DO NOT REMOVE THE KEY) and then turn the key to the "ON" (RUN) position. The indicator light will light or flash for another 10 minutes. When the light stops flashing for the third time, the new key is programmed into the computer and will start the car. All previously stored codes will be erased.



14

The ignition tumblers are the same as the door and trunk tumblers. There are 4 depths.



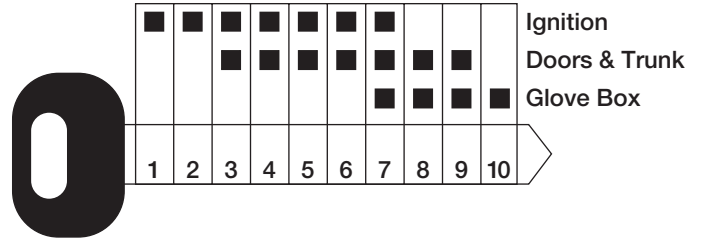
16

Auto Security Products makes a real nice keying kit for this car, it's part number: A-41-104.

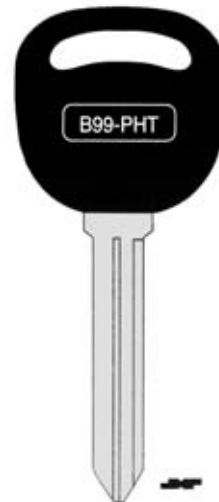
PROGRAMMING FOR CARS WHERE YOU WANT TO JUST CREATE A SPARE KEY:

(A total of 10 keys are allowed)

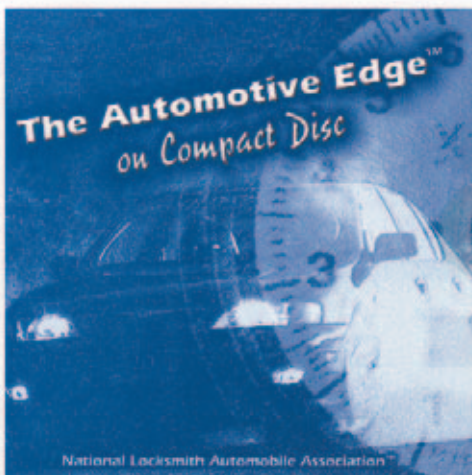
1. Place an already programmed Master Key in the keyway. Cycle the ignition from the "OFF" position to the "ON" (RUN) and wait until the "Security" light is not lit, then turn the key to the "OFF" position and remove it.
2. Within 10 seconds, insert the new, properly cut Transponder key in the ignition. Turn the key to "ON" (RUN). The "Security" indicator light will go on and off. Turn the key "OFF". The key will now start the car.
3. Repeat the steps 1 & 2 for each new key to be programmed.



CODE SERIES: ORTEC 0001-02000 (GM 10-Cut)												
Bow										Tip	Cut to Cut: .092	DEPTHS 1 .315 2 .290 3 .265 4 .240
1	2	3	4	5	6	7	8	9	10			
1.034	.942	.850	.757	.665	.573	.481	.389	.297	.205			
Bow										Tip		
FRAMON SPACING										Tip		
1	2	3	4	5	6	7	8	9	10			
.216	.308	.400	.493	.585	.677	.769	.861	.953	1.045			
Key Blanks:		ILCO: B99-PT				JET: B99-PHT						
Reed Codes:		N/A				HPC 1200 CM			CF215			
Curtis Clipper:		Cam GM6		Carriage GM6A		ITL MFG:			519			
Pak-A-Punch		PAK-G1				M.A.C.S.:			2			
NOTES: FRAMON—Lay tip stop clip flat against left side of vise, then tip stop key against clip. Set first cut at .216												



TRL



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#AE - CD



ACSI ELECTRIC Hinges

Electric hinges are a reliable and cost effective method of providing power to electric mortise locks, cylindrical locks and electric exit devices, without unsightly dangling wires. (See photograph 1.) Electrified hinges will transfer power from the door frame to the lock, concealing all wires. Eliminating visible wires makes the installation more secure than a door cord or an armored loop. Electrified hinges can eliminate the need for bulky power transfers as specified for use with some electrified exit devices.

Electric hinges transfer power by wires that run through the frame leaf of the hinge, through the knuckles of the hinge, and then, out the door leaf into the door.

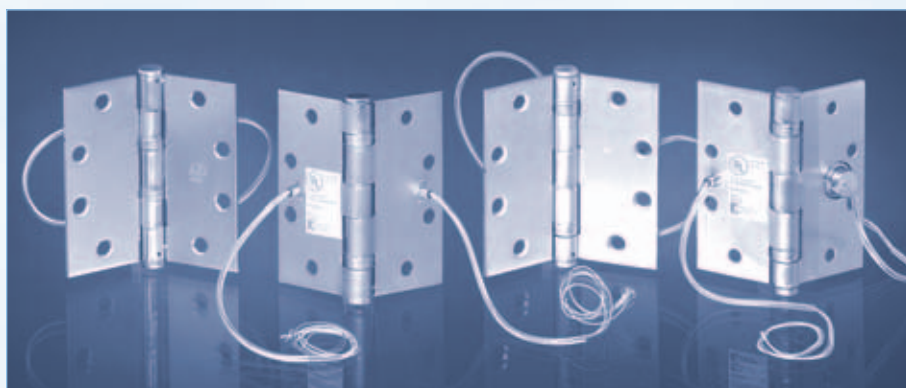
Mark Legrand, president of Architectural Control Systems, Inc. (ACSI), a leading manufacturer of electric hinges, explains how the hinges are made.

“Hinges are disassembled and mounted in a drilling fixture. (See photograph 2.) After drilling, the hinge is milled to intersect with the drill line. (See photograph 3.) Wires are then run through the hinge and checked for short circuits. (See photograph 4.) A protective ferrule is staked in and insulation is installed. Two short hinge

pins are installed and set with roll pins. The completed hinges are then checked one more time for short circuits before they are shipped.”

Although there are lots of advantages to electrified hinges, a few considerations will make installation less difficult. John Hooss, a technical sales/customer service representative with ACSI, provides some very helpful hints for successful installation of electrical hinges:

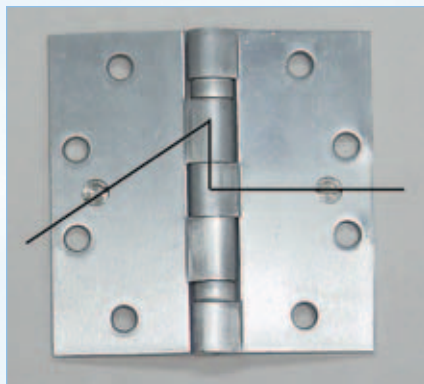
Always check the hinge before installation. There is nothing worse than getting everything installed and finding a shorted hinge. Check for shorts to ground with a continuity meter by attaching one lead of the



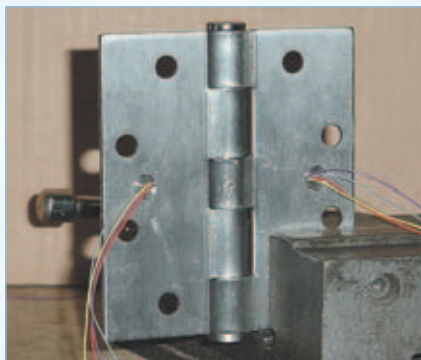
1. Electric hinges can provide power to electronic locking devices without unsightly dangling wires.



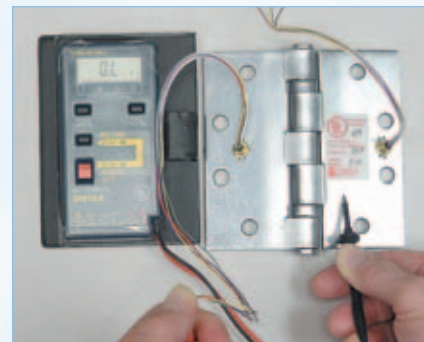
2. Hinges are mounted in a drilling fixture.



3. The hinge is milled.



4. Wires are run through the hinge.



5. Check all leads to the hinge.

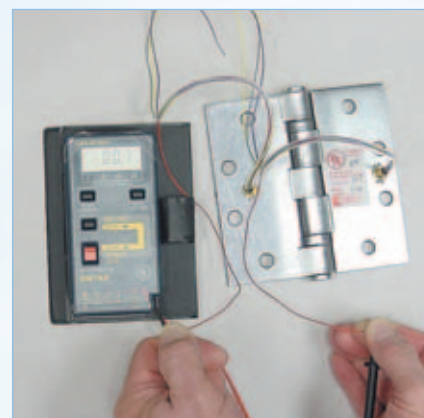
meter to the wires, and the other lead to the hinge. Open and close the hinge to see if any leads are shorted to the hinge. (See *photograph 5.*)

Always check that none of the wires are "open" (meaning that power cannot pass through the hinge) by testing each wire individually. Attach your continuity meter to each end of one color wire. You should read continuity through the hinge. If you do not have a complete circuit, you may have a broken wire. Repeat this process on each wire till all wires have been checked. (See *photograph 6.*) An electric hinge is not considered a load-bearing hinge, therefore, it should

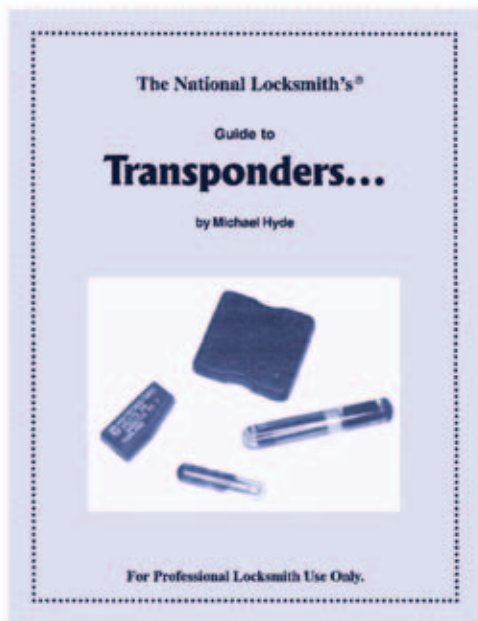
only be mounted in a center hinge location. If an electric hinge is mounted in the top or bottom hinge position, it can fail electrically or may cause door sag.

Before attaching the hinge wires, make sure that the door and frame preps match the location of the wires on the hinge. Each manufacturer uses their own wire location. (See *photograph 7.*) Some locations are similar, such as Hager and Stanley, but will not always interchange with each other.

Never hang the electric hinge by the wires. Remember that the wires are continuous through the hinge. If



6. If you do not have a complete circuit, you may have a broken wire.



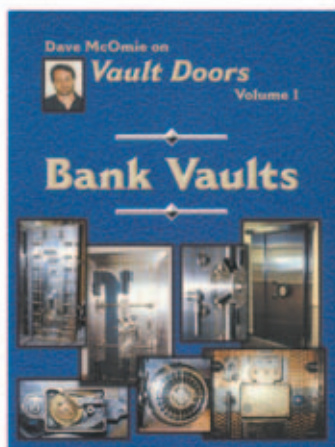
TNL's Guide to Transponders

Over 350 pages in a handy binder to accept updates as needed.

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Dave McOmie on Vault Doors Vol. 1 & 2



These openings can be a nightmare, but not when you bring Dave McOmie along with you on the job.

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7. Each manufacturer uses their own wire location.



8. An "S" hook will allow "hands free" installation.



9. Always stagger the splices.



10. The through wire hinge will give you a clean, concealed installation.

they are pulled tight in the hinge, it can cause an internal short. The use of an "S" hook will allow a more "hands free" installation when making wire connections. (See photograph 8.) Hang the hinge by the bottom screw hole of the hinge and the bottom screw hole in the frame with the wires facing out when making connections. After making connections the hinge can then be flipped up into position.

There are several ways to connect wires to each other. Here are a few examples:

A. Soldering the wires and wrapping them with electrical tape can give the cleanest installation, but it can also be time consuming and difficult if you don't own a cordless soldering iron. Crimp connectors are a quick solution but can be cumbersome when trying to fish the wires in or out of the frame prep. Wire nuts are not recommended.


B. When soldering the wires, "tin" each wire lead (add a little solder to each lead) before twisting the wires together. After soldering the leads together it is best if you lay the lead back on itself and then wrap a small amount of electrical tape around the wires. Always stagger the splices so they are not all in a bunch. (See photograph 9.) This will allow the wires to be fished through the prep holes with greater ease and will make removal at a later date more convenient.

C. If you use the crimp connectors, stagger all of the splices, again. Tape the crimps down to the wire so it can be pulled back out of the prep if you need to remove the hinge.

D. Align the hinge by pushing the wires into the prep holes in the frame and the door. Make sure that none of the wires are behind the hinge and make one last check to see if the prep hole and the wire positions match. Start all the hinge screws, and finish by a final tightening.

E. When completed, the through wire hinge will give you a clean, concealed installation. (See photograph 10.) Electric hinges may take a little more time and effort to install, but the results are well worth the effort.

For more information on electric hinges contact:

*Architectural Control Systems, Inc.
10666 Gateway Blvd.
St. Louis, MO 63132
Phone: 1-800-753-5558
Web: www.acsi-inc.com
Circle 333 on Rapid Reply. *

The Ilco Advantage™

Placing key blank reference information a mouse click away.

by Jerry McNickle, CML

Ilco has developed a Windows™ based program to place your key blank reference information a mouse click away. It is supplied on a CD that will allow you to run it on most PCs running Microsoft Windows 95™, Windows 98™ or Windows ME™. In addition to key blank reference information, it also includes databases detailing a variety of related items, such as Ilco key machines.

Few locksmiths would care to practice their trade without their Ilco reference materials. The big Ilco #60 key blank book covers over five

thousand key blanks. The small Ilco #70 key-blank catalog details the six hundred or so most popular key blanks. The various Ilco guides and cross references detail key blank usage on almost every vehicle sold in North America since before World War II. All of the information locksmiths have come to depend upon in these publications is included in the Ilco Advantage™ software.

There are six main sections to the Ilco Advantage™ software application as shown in *illustration 1*:

1. The Auto Truck section that

details key-blank requirements for most vehicles marketed in North America since 1975.

2. The Classic Auto Truck section that provides information about the key-blank requirements of most vehicles in North America between 1940 and 1975.

3. The Motorcycle section lists key-blank applications to motorcycles.

4. The Key Blank section lists over five thousand Ilco key blanks, along with cross-references to Ilco EZ numbers, Taylor key blank numbers, Dominion, Orion, Silca, Star and other key blank numbering systems.

5. The Key Machine section shows the current line of Ilco key machines and the types of keys they create.

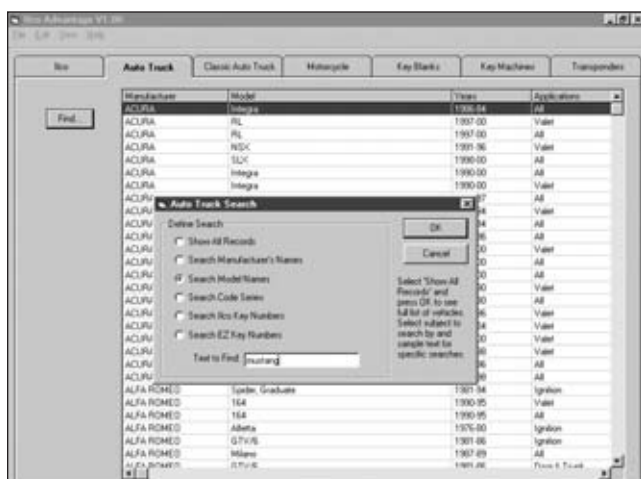
6. The Transponder section includes everything you need to know to successfully duplicate transponder keys, including key blank applications and On Board Programming (OBP) procedures.



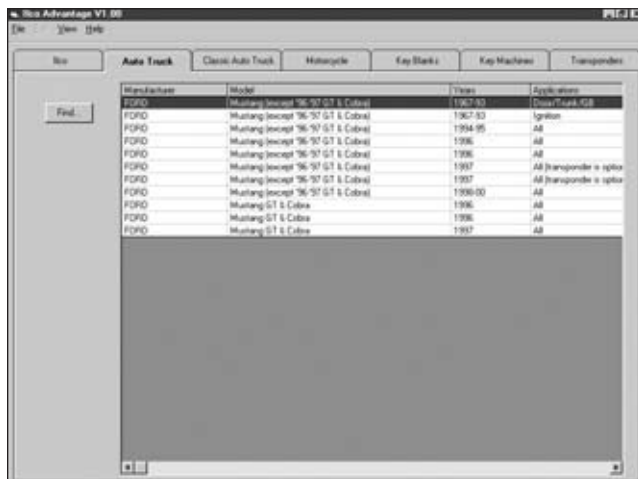
1. There are six main sections to the Ilco Advantage™.



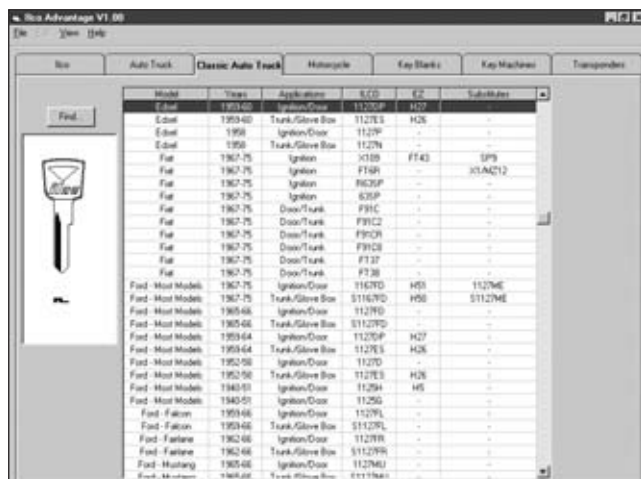
2. A scrolling list of information.



3. Click on the "Find" button and the Search Dialog will appear.



4. Information about vehicles named "Mustang."



5. A search for "EDS" or "eds" in the Classic Auto Truck Section.

Clicking on the appropriate tab brings the selected information into view, where more detailed information becomes available.

Displayed in the Auto-Truck section, is a scrolling list of information in the same alphabetical order format as the Ilco Auto Truck Cross Reference publication. (See illustration 2.) Scrolling down the list moves through the makes and models of vehicles listed. Scrolling across the page brings additional data about each model into view. There are columns for manufacturer, model name, model years, lock applications, code series, four columns of key blank identification numbers, transponder information and possible substitute key blank information.

To search for specific applications, click on the "Find" button and the Search Dialog will appear as shown in illustration 3. Select the focus of your inquiry and type in the information

you require. In this illustration, information about vehicles named "Mustang" is being requested. The results of the inquiry are shown in illustration 4. An inquiry about "Ford" vehicles would have brought a longer list while a request for vehicles that use the "H54" key blank would have resulted in a completely different list.

Entering partial names will still allow for searches, but could allow extra items to be included in the results. For example, a search for "Must" will bring back about the same as "Mustang", but a search for "M" will return a list that includes every vehicle that has an "M" in their name. The search function is not case sensitive, upper and lower case letters are the same. A search for "EDS" or "eds" in the Classic Auto Truck Section will result in "Edsel" as shown in illustration 5. The Motorcycle section provides similar search capabilities for the listed models of motorcycles.

By far the largest database in the Ilco Advantage™ application is used in the Key Blank section. Searches can be made by many lock manufacturers' names, original manufacturers' key blank number, or by more than a dozen replacement key blank numbering systems. As depicted in illustration 6, a search is being made

under Schlage's key blank numbering system for six pin key blanks. The results of this search are shown in illustration 7.

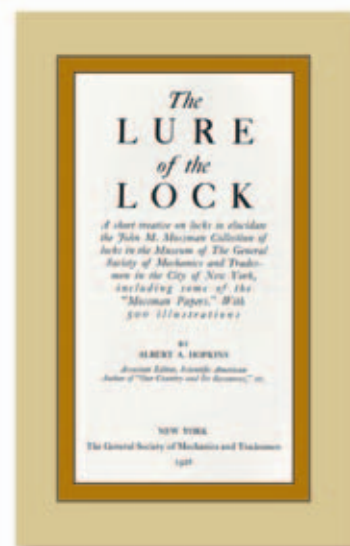
The list of other key blank numbers continues off the screen and the table must be scrolled

Continued on page 48



6. A search is being made under Schlage's key blank numbering.

The Lure of the Lock

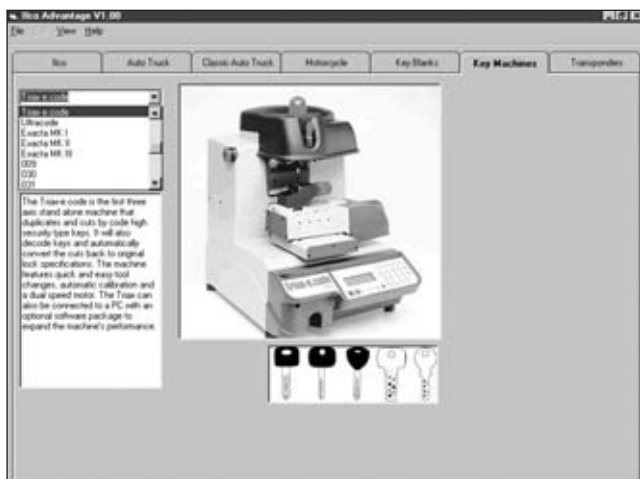


This hardcover book, compiled in 1928, features dozens and dozens of beautiful photographs on ancient through modern locks.

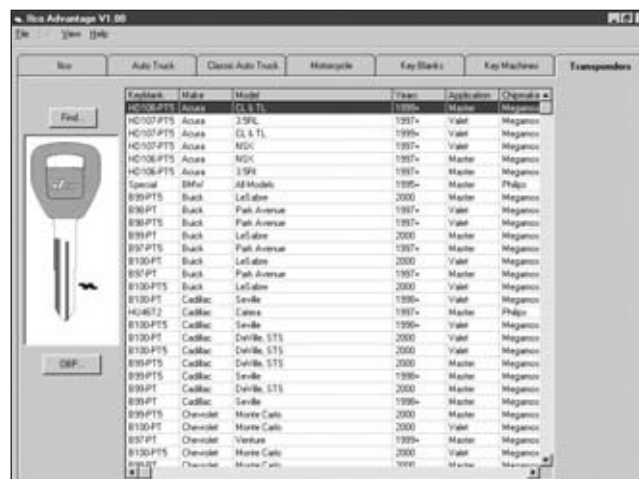
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#LURE



13. The selected results are shown.



14. The Transponder section.



15. There is the ability to display the OBP.

illustrations of the types of keys the machine is designed to make, what electrical voltages it can run on, and a description of special features. Pressing the Down Arrow key on the keyboard will step you through the list (and the Up Arrow key will move you back) or you may select a key machine by model name from the drop down list, as shown in *illustration 13*.

12. The result can be seen in *illustration 13*.

The Transponder section details the key blanks needed for transponder equipped vehicles as well as what types of chips are used in them. (See *illustration 14*.) In addition to search capabilities similar to the other sections, there is the ability to display the OBP (On Board Programming) procedures required for each vehicle. (See *illustration 15*.)

Illustration 11, presents the answer. There are columns of information both to the right and the left of those displayed in this picture, but only so much information can be on the screen at one time.

The Key Machine section of Ilco Advantage details more than forty different models of key machines and transponder equipment currently offered by Ilco. A photo of each machine is accompanied by

The Help menu provides a quick reference manual to help the user understand the information and how it is laid out and presented. Selecting the Print menu will print whatever page of information is currently being displayed.

Knowledge and information is the secret weapon of the modern professional locksmith. Ilco Advantage has been produced to supply the locksmith with a reference as powerful and invaluable as all of the other reference information published by Ilco. Whether your customer is in need of keys for a 1940 Packard-Kaiser or a 2001 Jaguar, all of the information you need to be fully informed is now at your fingertips.

The Ilco Advantage software application is available from the same distributor that supplies you with your Ilco key blanks, cylinders and key machines. For additional information, requests can be made to:

Kaba Ilco Corp
400 Jeffreys Rd.
Rocky Mount, NC 27804
Or locksmith@irm.kaba.com
Circle 331 on Rapid Reply.

TNL

ProMaster 4

ProMaster 4 is without a doubt, the most comprehensive and easy to use master-key system management tool available anywhere in the world.



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#PM - 5



MAG LATCH GUARDS

MAG's full line of latch guards will cover all of your residential and commercial security needs.

Solid steel latch guards offer greater protection from crowbar attacks by shielding the latch and deadbolt. Some models feature an anti-spread pin for even greater security.

Most MAG latch guards fit both 2-3/8" and 2-3/4" backsets, and can accommodate up to 3-1/2" roses and no grinding is required for fast installation. MAG Latch Guards are available in both permanent and removable styles and come in a variety of finishes including brass, chrome, aluminum, duranodic, and stainless steel.

MAG Store Front Latch Guard

The 8855-DU is for a 4" center hung frame with a 1-1/8" offset.



Storefront cylinder with cylinder guard. (Pre-installation.)



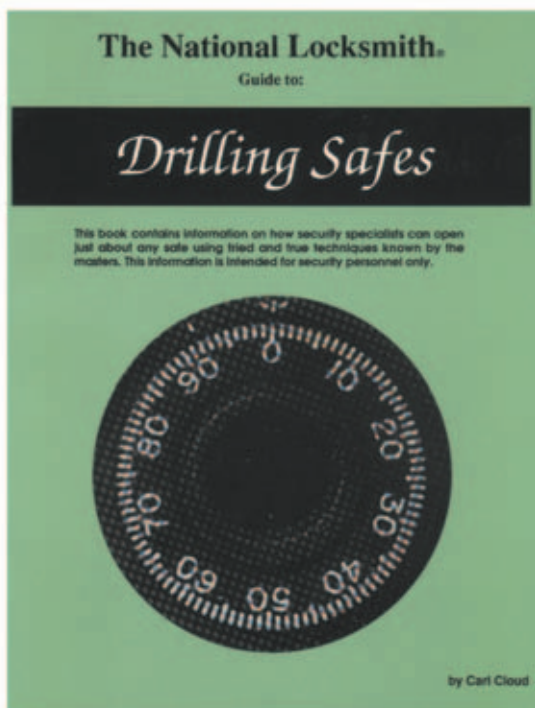
Remove cylinder guard.



Place latch guard over cylinder and temporarily tape in place. Using center punch provided, place on edge of the small hole and strike with hammer.



Drill 5/16" hole thru door. Drill outside hole to 3/8".



Drilling Safes

One of the most expert safemen in the country, Carl Cloud has written a very important book on safe opening.

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Install discs in top and bottom large holes. Install bolts, washers, jam nuts, and acorn nuts, tighten securely.



Tap anti-spread pins to mark for 5/16" holes.



Drill 5/16" holes in frame.



Installed latch guard for permanent installation.



MAG's patented storefront latch guards allow removal during operating hours. This allows the door to swing in or out and prevents potential injury when latch guard is exposed.

For removable installation remove discs from large holes and latch guard can be removed when door is ajar.



Completed removable installation.



15 Minute Safe Opening

This book deals exclusively with round head lift out doors. Shows five ways to open a Major; three ways to find the Dog Pin on a Major; four ways to open a Star; four ways to open a LaGard style round head.

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MAG Latch Guard for Out Opening Doors

The 8849-DU (8850-DU has anti-spread pin) is an 11-3/4" Universal Latch Guard with a 1" X 8-3/4" cutout. MAG's patented 8849 and 8850 latch guard's fit single key-in-knob locks without having to modify the latch guard. This makes it the most universal latch guard available today.



Place latch guard on door centered on lock. Ensure that strike seats properly in recessed pocket of latch guard. Mark holes in center of mounting holes.



Drill 5/16" holes through door

Note: When installing 8850 latch guard, you will need to mark and drill 5/16" hole in frame for anti-spread pin.

MAG has a wide range of latch guard products that will fit just about any need. However, should you require a specialty latch guard item, MAG will custom make any shape or size you need.



Install bolts, washers, and nuts. Tighten securely and the installation is complete.

For more information on MAG products, contact:

MAG Engineering & Manufacturing, Inc.

15381 Assembly Lane

Huntington Beach, CA 92649

Phone: 800-624-9942

Fax: (714) 892-6845

E-mail: mageng@mindspring.com

Web: www.magsecurity.com

Circle 332 On Rapid Reply.



Master Keying Software

With the presence of computers in every aspect of the business world, more and more manufacturers are producing software programs for various applications. Master Keying software programs are just one such application.

For many, master keying software has alleviated the guess work and simplified system design. Allowing the computer to calculate progressions, eliminate duplications and accidents, and do it in the fraction of the time it would take to do by hand, can be very appealing.

Blackhawk Products Biaxial Master Keying

Biaxial Master Keying lets you design systems using familiar page-view layouts. It avoids all biaxial combinations that cannot be cut. Each system is designed with one set of angles used throughout the entire system.

You have full control over the keybitting array. Start with a random or

systematic layout, and modify any entry's position. Use part, all, or none of each column. Arrange the sequence of progression in any order. Lock in the array to avoid accidental changes.

You can flag various types of combinations as undesirable, and then display and use them, or suppress them. Uncuttable combinations are always suppressed.

Preview the system by seeing how many changes are available on each page.

Each page can display the page master, vertical and horizontal group masters, row masters, and block masters.

On each page, combinations that are used in the system are flagged by color. Standard key numbering is included, or you can use any other

symbols that you wish. You can switch between views of the combinations and of the labels. Select as many combinations as you like. Undesirable combinations are easily avoided.

An on-screen pinning chart is available for each combination.

Text program is recommended for persons who have had at least a basic

master keying design course.

For more information contact:

Blackhawk Products

25913 Road T5

Dolores, CO 81313

Phone: (970) 882-7191

Fax: (970) 882-7228

E-mail: staff@blackhawk7.com

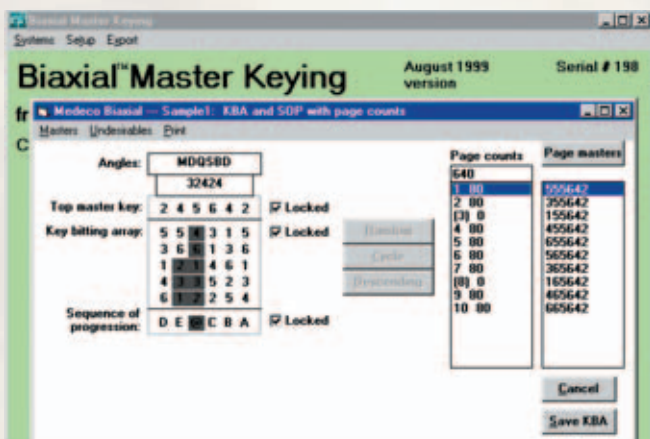
Web: www.blackhawk7.com

DLA Multi-Master +, Multi-Core +, and Multi-Tracker

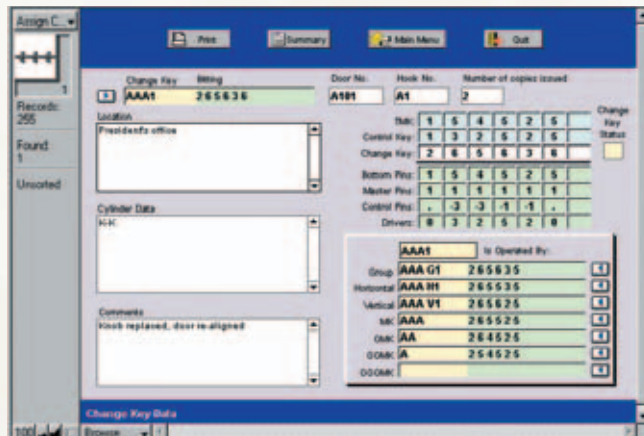
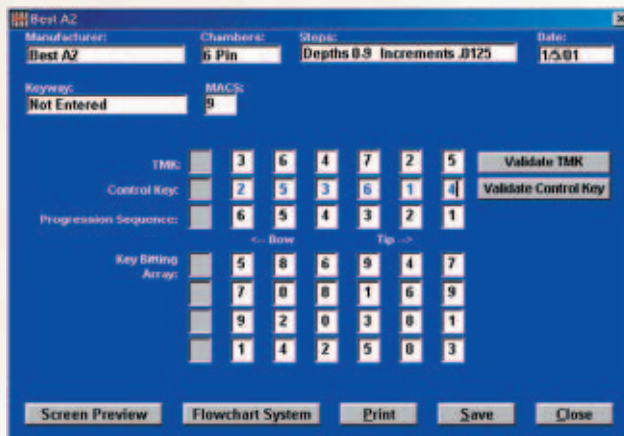
Multi-Master+ by DLA Security Systems, Inc., is a Windows-based program for creating master key systems for standard cylinders. Also available is Multi-Core+ for creating master key systems for interchangeable core cylinders, and Multi-Tracker Master Key System Management software. All three programs run on Windows 95, 98, NT and ME.

Features: Multi-Master+ and Multi-Core+ allow quick, easy creation of master key systems. Both programs will create the maximum number of change keys available (including all possible master and submasters), and allow you to use whatever portion of the system you wish. You can preview the system on-screen before printing, print any range of MKs, etc. Multi-Tracker is a database for managing as many master key systems as you can create. Enter location data, cylinder data, comments, etc. Systems created with Multi-Master+ and Multi-Core+ can be easily imported into Multi-Tracker.

A demo is available.



Blackhawk Products Biaxial Master Keying software.



DLA Multi-Master +, Multi-Core +, and Multi-Tracker software.

For more information contact:

DLA Security Systems, Inc.

629 Kimball Ave.

Westfield, NJ 07090

Phone: (908) 233-7755

Fax: (908) 233-7755

E-Mail: dlasec@pipeline.com

Web: www.dlaco.com

Framon's TMK Plus Master Key Program

Framon's TMK Plus, is designed to be an affordable and easy to use program for designing master key systems. The program is divided into six different sections. Here is a brief overview of what each section does:

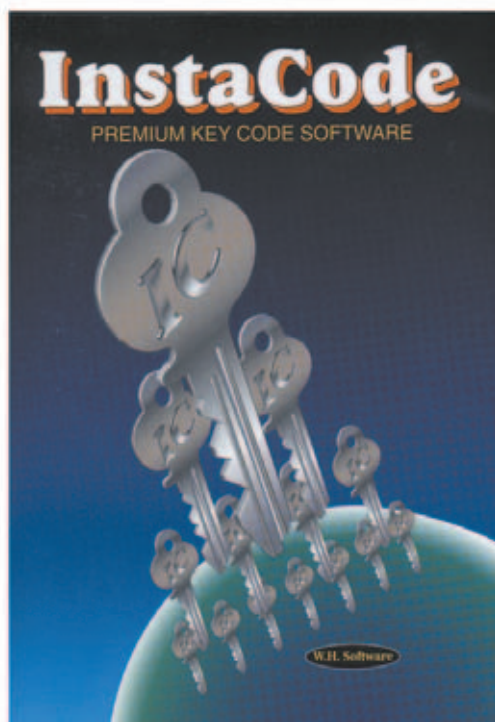
Customer's Screen: The first screen of the program is where you will enter information about your customer when designing a system. Several different fields are available to enter address, phone, fax, and comments regarding the project. You can also review systems previously generated at this screen.

Generate System Screen: This is the heart of your system. Here you will pick out a manufacturer that you will be setting up a system for. After picking a system, the program will automatically generate a system for you and check for some basic errors. If you do not like the system, you can either regenerate another, or enter your own system using the keyboard and mouse. A click on the calculator button will determine how many usable keys the system will have.

Select Level: Indicate how many levels of master keys you will need.

View Biting List: A page view of the system is shown, coded by color. Different level keys are shown in varying colors to make things easy.

InstaCode 2002



InstaCode 2002, the latest release of InstaCode, includes over 5000 code series covering general/utility, padlock, vehicle and motorcycles.

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#IC - 2002

How To Create Master Key Systems

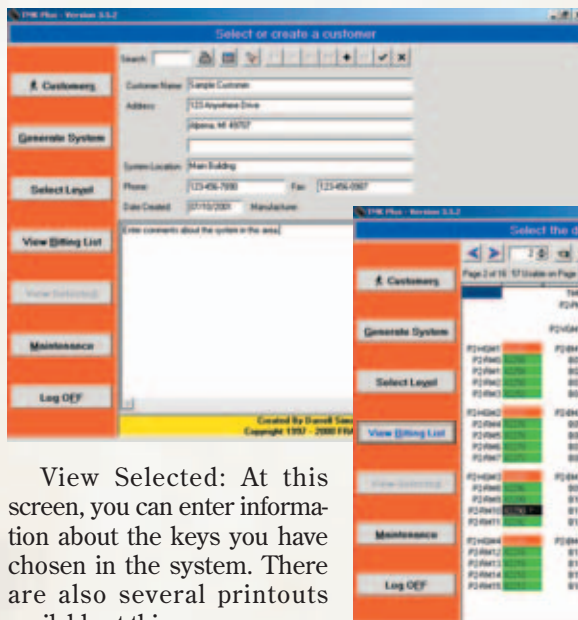


Never has there been a more concise, easier to understand program to teach Master Keying.

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#HT - CMK1



Framon's TMK Plus Master Key software.

View Selected: At this screen, you can enter information about the keys you have chosen in the system. There are also several printouts available at this screen.

Maintenance: Modify users and screen colors; enter your own company logo, and several other customized features at this screen.

TMK Plus runs on Windows 95, 98, NT, 2000 & ME.

For more information contact:

Framon Manufacturing Co.

909 Washington Ave.

Alpena, MI 49707

Phone: (517) 354-5623

Fax: (517) 354-4238

E-mail: FRAMON@NORTH-LAND.LIB.MI.US

Web: www.framon.com

HPC's Software Combo

For the Security Specialist, HPC's new Software Combo Pack, MasterKing™ and How to Create Master Key Systems, is the perfect solution in your quest for development of superior master keying systems.

HPC's MasterKing™ has been completely redesigned from the

ground up. MasterKing™ will guide you through the development of simple or complex master key systems step by step. You can set up systems very quickly using defaults and factory specifications or adjust and fine-tune almost every aspect of your system to tailor it to your needs.

MasterKing™ creates superior master keying systems faster than ever before. Enter some basic information and MasterKing™ will generate your systems quickly and easily. MasterKing™ eliminates transposed or repeated numbers as well as uncuttable keys. Manually writing master key systems can be very time consuming and error prone. Use MasterKing™ to produce accurate systems in minutes instead of days.

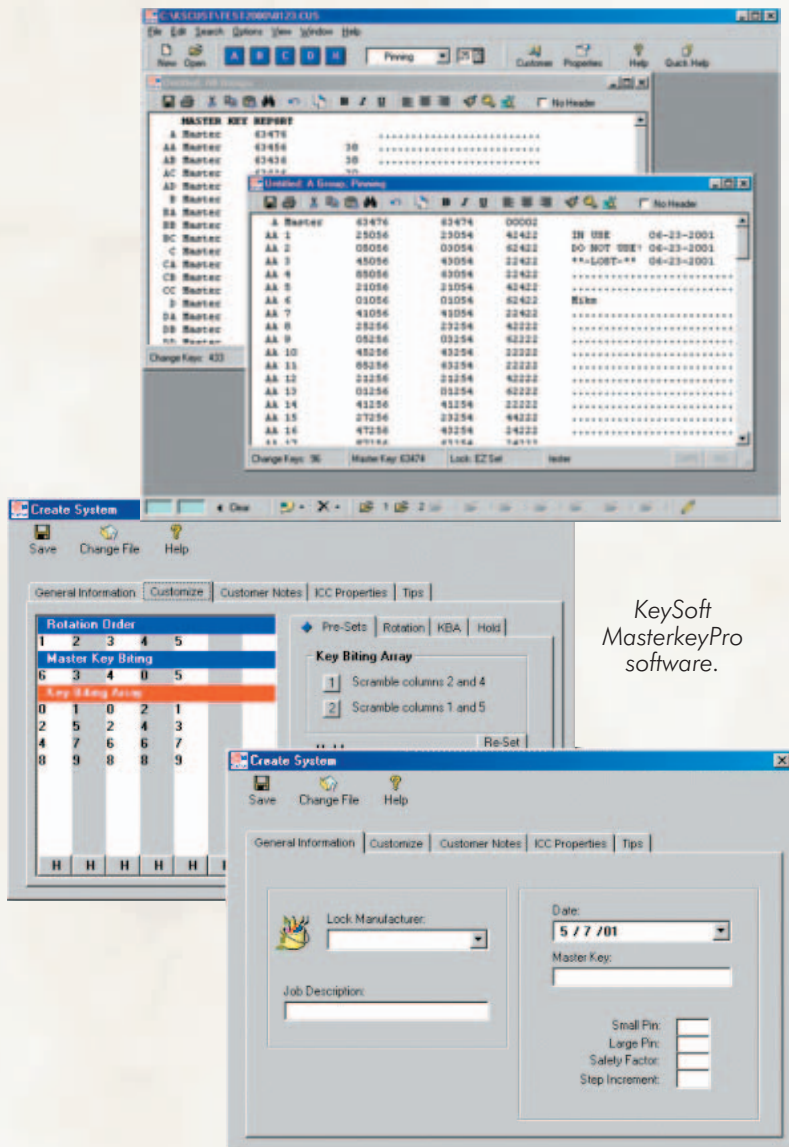
HPC's new combo pack also gives you "How to Create Master Key Systems For the Security Specialist." Never has there been a more concise, easier to understand program to teach Master Keying. Detailed animation and

colorful illustrations take you through the essentials of creating simple, as well as complex master key systems. Learn how to choose the correct key bittings, how to pin the cylinders, how to create Total Position Progression Systems, Rotating Constant Systems, Page Systems, and much more!

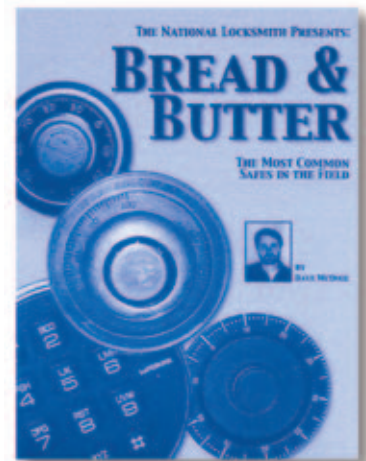
MK-CD includes Interchangeable Core & Interactive Depth & Spacing Guide on one CD.



HPC's MasterKing™ software.



Bread & Butter



Now here is one amazing value!

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#BB - 01

For more information contact:

HPC, Inc.

3999 N. 25th Avenue

Schiller Park, IL 60176 USA

Phone: (847) 671-6280

Fax: (847) 671-6343

E-mail: HPC@HPCWORLD.com

Web: www.hpcworld.com

KeySoft MasterkeyPro

Choosing the right software from the right company can be more than just buying the name. While the name is one of the most important things to consider, even the best hardware stores can't cut good keys. It's just not what they do best. Well, software is no different. At KeySoft we released our first version of Master Keying software in 1990, and we've been delivering high quality up-to-date software ever since. We build software solutions for locksmiths not key machines. But then, isn't that what you're looking for?

Computers have changed the way we do business in today's world. Some have embraced the idea of computers from the start, while others have simply put them off for as long as possible. We've always designed our software to accommodate both types of users. If you're an experienced user you'll love all the powerful customizing features we offer. If you're new to computers you'll appreciate the way we've designed our software for easy use with plenty of comprehensive help when you need it.

MasterkeyPro is more than just numbers, it's a working environment designed just for you.

For more information contact:


KeySoft Masterkeying Software

P.O. Box 26604

Salt Lake City, UT 84126-0604

Phone: 800-505-6636

E - m a i l : KEYSOFT@BURGOYNE.COM

Web: MasterkeyPro.com 

The WIGHTER Side

Slow Learner.



by
**Sara
Probasco**

“Can somebody come change out the locks and make me a couple of extra keys for a house I’m trying to show, this morning?” the Realtor asked when she called. “I guess the keys are lost. I can’t find them anywhere.”

When Don got to the house, the door was standing open. “Hey, Sharon, I thought you said you’d lost the keys,” he called to the Realtor. “How did you get in?”

“Oh, getting in is no problem,” she replied. “I just latch onto one of the neighborhood kids. If you pick the right one, with arms skinny enough and long enough, they can reach in through the mail slot and turn the doorknob from the inside.”

“You’re kidding,” Don replied.

“Nope.” Sharon was grinning proudly. “I’ll show you.”

Closing the door, she walked down the front sidewalk and called to a young child who was playing in the next yard. Within minutes, the little girl had reached in through the brass mail slot in the front door, wriggled her arm about until she could reach the knob, and opened the door from the inside.

“See?” Sharon said, patting the child on the head approvingly. “Nothing to it. I just thought it would be better to have everything working properly for the prospective buyers.”

“Hmmm,” Don muttered. “Who all knows about this?”

“Just a couple of neighborhood children we’ve called upon to help us, the past few days. In fact, a little boy down the street was the one who gave us the idea in the first place. He said he sometimes gets into his grandmother’s house that way.”

“And how many kids around here do you suppose know about this by now?” Don asked.

“We’ve only called on two or three.”

Don raised his eyebrows and pursed his lips.

“Now, Don, I’m sure these sweet

little children wouldn’t say anything about this to anybody else,” Sharon quickly added, but her voice sounded less confident than it had earlier.

“There’s a good way to find out,” Don said. Glancing about, he spied a couple of small boys playing in a sand box across the street. “Are either of those kids in on this?” he asked the Realtor.

“Not that I know of,” she replied.

Walking across, Don knocked on the front door and asked the mother’s permission to put a couple of questions to the tykes. Permission granted, he squatted down to their level.

“Can you help me figure out something?” he asked. “I’ve been having a problem opening the front door of that house.” He pointed across the street. “Do you have any idea how I can get in?”

“Sure,” one of the little boys replied. “Just reach in through the mail slot. Everybody knows that.”

“Well, looks like you’ve sabotaged your security,” Don said to Sharon a few minutes later. “Changing the locks on this house won’t stop neighborhood kids from reaching in through the mail slot to open the front door.”

“I feel so stupid. I never thought about the ramifications. What can we do now?” she asked.

“You’ll need to either seal up the mail slot permanently, or go to double-cylinder deadbolts and not leave the inside key in the lock.”

“But, isn’t that dangerous, being inside a locked house with no key in the door? What if there was a fire?”

“Just hang the key on a cup hook convenient to the door, but out of reach of the mail slot. It’s a good idea to put the hook low enough so someone trying to get out could reach the key while crawling on the floor. That way, if there is a fire, they could probably stay below the smoke level.

“I can’t believe Sharon hadn’t thought of the hazards involved,” I said later, when Don was telling me

about the incident. “What if some of the children had gone in on their own and damaged the property or been injured, somehow. That’s scary.”

“She said she didn’t think children that age would go in, on their own. Even so, it obviously never occurred to her that an unscrupulous adult might use one of the children to get into that house or other houses with the same set-up.”

“Where has she been? The news media has been full of reports on criminals using little kids for all sorts of crimes, lately. Criminals have learned that children like that are too young to be prosecuted, even if they’re caught.”

“Apparently she never gave that a thought,” Don said.

“That’s the problem. People don’t think things through, any more. Take the lady who came into the shop this afternoon, for example.”

“What lady?”

“You were gone, at the time,” I said. “She brought a key back, said it didn’t work. She was ranting about how she could have gotten a bad key made anywhere in town. She said she came to us because we were supposed to be the experts, and that the man who cut the duplicate for her had assured her it was guaranteed, and so on.”

“What did you say?”

“What could I say? I told her we’d either replace it with a working key or refund her money. She wanted a key. When she produced the original, I couldn’t see the problem, even using the micrometer, so I cut her a new one and asked her to try it in her lock right away and let us know if there was any problem.”

“And?”

“She was back an hour later, saying the new one wouldn’t work, either. I checked it every way I knew and could find absolutely no discrepancy between the duplicate and the key she had presented as the original. Finally, I asked her if the original worked smoothly in the lock. ‘It won’t work at

all,' she said. 'That's why I came in to get a new key. I just keep that old one for emergencies.'"

"Sounds like she's one of those who gets lost in thought because it's such unfamiliar territory," Don said.

"Obviously, the woman didn't understand how keys work. I think she'll have a better grip on the situation, next time. I learned something important from the experience, too," I added.

"What's that?"

"Be careful what you guarantee. I should have asked more questions up front. Because I had assured her we'd either make the key work or refund her money, we were out two wasted key blanks plus the time spent working from her faulty original."

"That's food for thought," Don said. Then his eyes took on a twinkle. "And you know what they say about that."

"What?" I asked, walking straight into it.

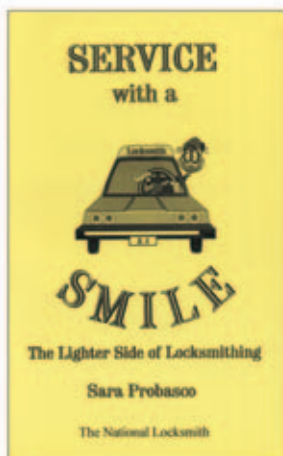
"Where food for thought is concerned, these days most people are either allergic, or on a hunger strike."

Looks like I'd learn, doesn't it!

You'd think I would have learned!

TNL

Service with a Smile

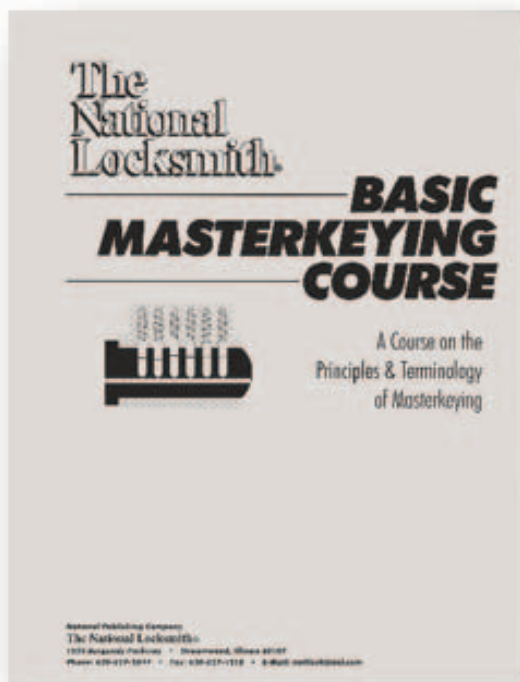


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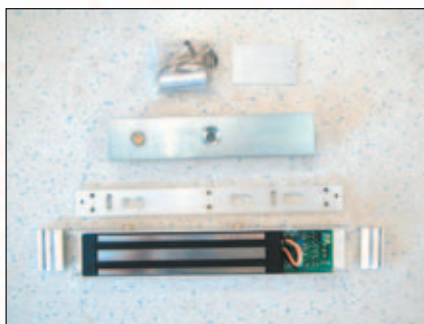
#MK - 1

YORTEC

Electromagnetic Locks



by Richard Allen Dickey



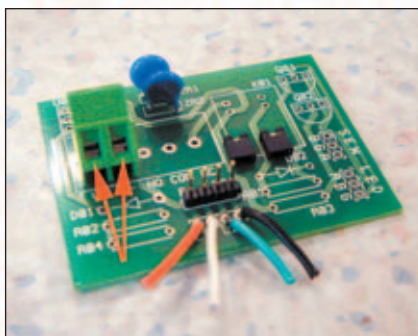
1. The entire M305 electromagnetic lock assembly.

YORTEC is a manufacturer of Electromagnetic Locks (mag locks) and Electric Strikes with over 10 years of experience. YORTEC sent us two mag locks for review: the M611 and the M305. Let's first go over some of the features and options of these two models and then I want to try to explain what makes a mag lock work. This could get interesting!

The M305 is a 600-pound holding force mag lock. (See photograph 1.) As you can see in the photograph, a "slide on" mounting bracket is included. This type of mounting system is the norm today instead of the exception as it was a few years ago.

The 600-pound holding force of the M305 is designed for light duty applications, where the M611, with its 1200-pound holding force is for larger doors.

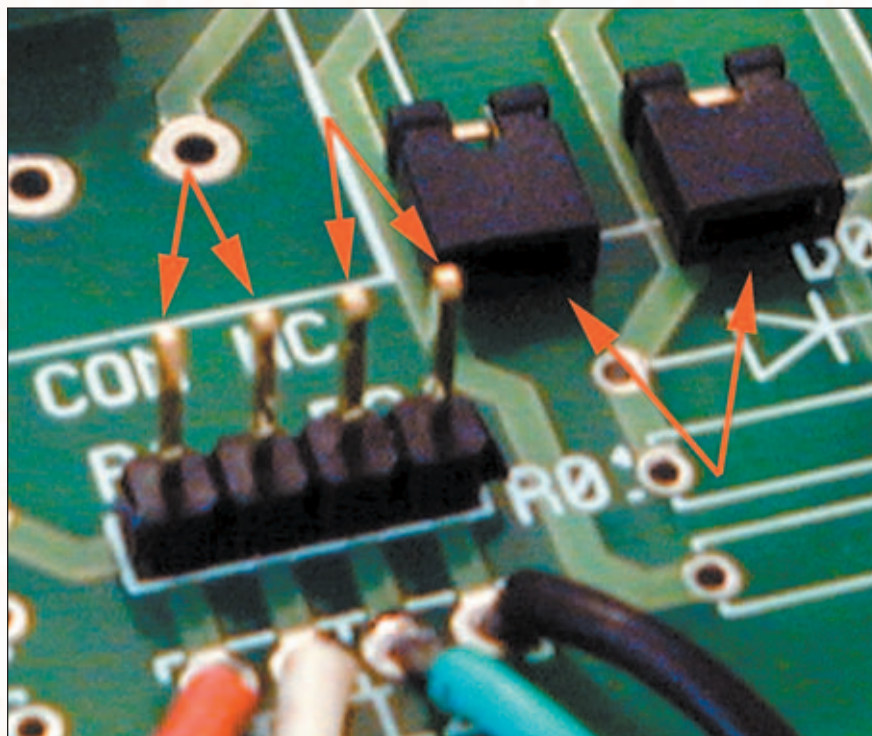
Both mag locks may be set to work on either 12 or 24 volts DC. The power consumption of each model is listed as 400 milliamperes at 12 volts DC and half that at 24 volts DC.



2. A circuit card is used to interface the mag lock to your power supply.

Current draw is one of the most important things to consider when specking a power supply for a system. I like to size my power supply at 100% above my expected load. That allows for future expansion as well as the additional power consumption from wiring and other items that are often overlooked.

There is a circuit card located inside the housing of the mag lock. (See photograph 2.) It is the interface between the coils of wire in the magnet and the power source. The wires from the power supply go to the



3. Jumpers are used to select either 12 or 24 volts DC.

two screw down terminals, pointed to by the arrows. One is designated positive and the other is negative.

The voltage selection is done by jumpers. There are four gold plated pins that attach to the ends of the wires that go into the magnet. (See *photograph 3.*) Depending on the position of the jumpers, the mag lock will be set up for either 12 or 24 volts DC. If you were to place the two black jumpers over the pins as illustrated, the selection would be for 12 volts. Only using one jumper to connect the two center pins together would select 24 Volts DC.

One item of interest is located on the metal piece that attaches to the door. This metal piece is called an armature for those not familiar with the term. A small round disk that is under spring pressure is attached to one end of the armature. (See *photograph 4.*) Photograph 5 shows a closer view of the disk and spring. I have not seen this on other armatures that I have reviewed in the past. Its purpose is to assist with the separation of the armature and the magnet when power is removed. (See *photograph 6.*) Why you ask?

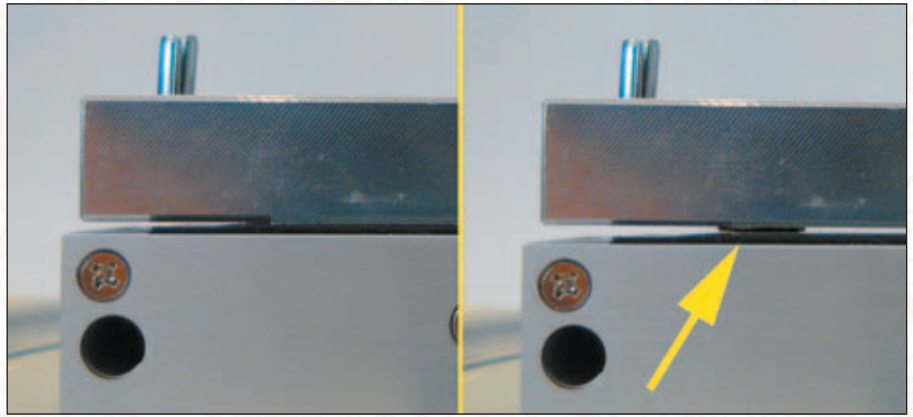
Well, there is something called residual magnetism. It is that little bit of magnetism left over after power is removed. Depending on the exact



4. A small round disk that is under spring pressure is attached to one end of the armature.

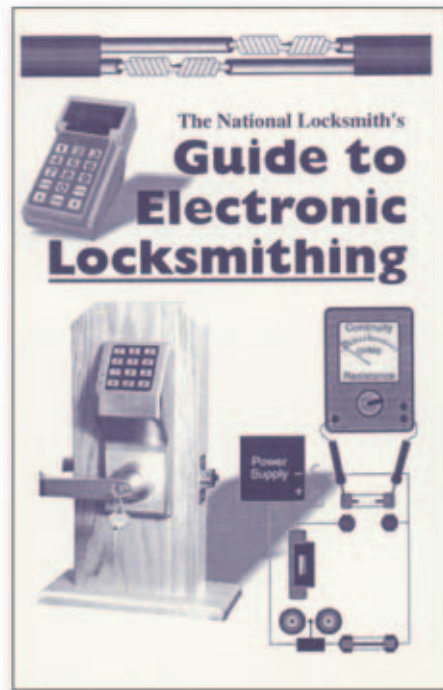


5. A closer look at the round disk and spring.



6. Here is a view of exactly what the little round disk is for. It helps overcome the residual magnetism after power is removed from the mag lock.

Electronic Locksmithing



Everyone knows there's big money in selling, installing and servicing electronic security such as mag locks, electronic strikes, and simple access control.

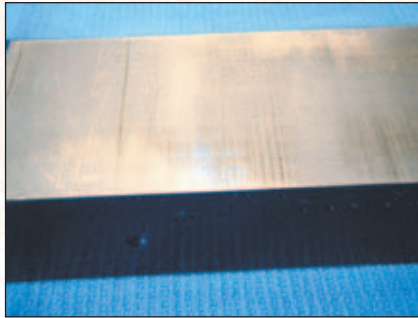
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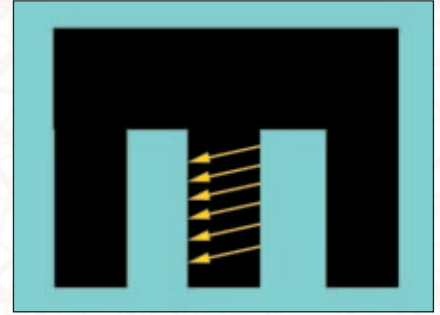
#EL - 1



7. This is only one of the hundreds of metal plates used to construct a mag lock.



8. When all of the metal plates are put together, you get what looks like a bar of metal.



9. Wire is wrapped around the center leg of the metal plates.

type of metal used in the plates of the magnet, the magnet will either lose its magnetism quickly, slowly or not at all after power is removed. For the purposes of a mag lock, you obviously want the magnet to instantly lose all of its magnetic force when power is removed. However this is not always the case.

Some manufacturers choose to use electronic components to help dissipate the magnetic force. Some do a very good job and others not so good. YORTEC has chosen a mechanical means to try to overcome this little bit of residual magnetism. It did a good job on the light duty M305, however the M611 was still a little slow to release. The result of a slow release would be a person that was in a hurry, running into the door before it was able to open. That's not a good thing.

The M611 and the M305 mag locks are available in either a US28 or a US4 finish. A door status sensor (reed switch) and a lock status indicator (L.E.D.) are available monitoring options. Several mounting accessories are also available. Now let's get into a little explanation of how a mag lock works and exactly what is found inside one.

An electromagnet is a very simple device that has magnetic properties

when electricity is applied. When electricity is removed, the magnetic properties also go away.

One of the simplest types of electromagnets would be the wire wrapped around the nail trick that most of us played with in school. These heavy-duty mag locks are the exact same thing, just shaped a little differently.

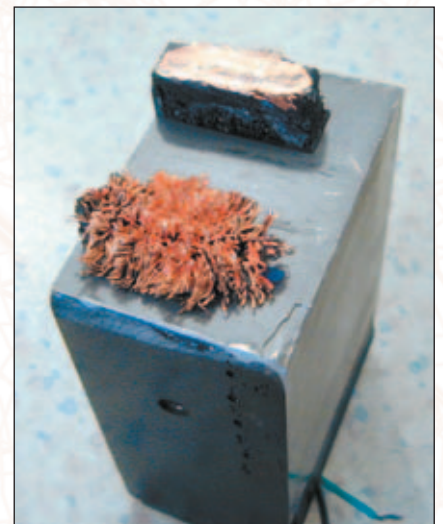
For a basic mag lock there are only a few parts. There are lots of metal plates stacked on top of each other. (See photograph 7.) These plates are generally made from special iron or steel alloys, which are easily magnetized with electricity. The more plates you stack, the larger the magnet will be. (See photograph 8.) These metal plates do the same job as the nail did in the classroom magnet mentioned earlier.

The next part is the wire. Just like the classroom magnet, wire gets wrapped around the metal plates. Because of the horseshoe shape of the metal plates, the wire is wrapped a little differently than it would be with a solid piece of metal or a classroom magnet nail. The wire is wrapped around the center leg of the three legs on the metal plate. (See photograph 9.)

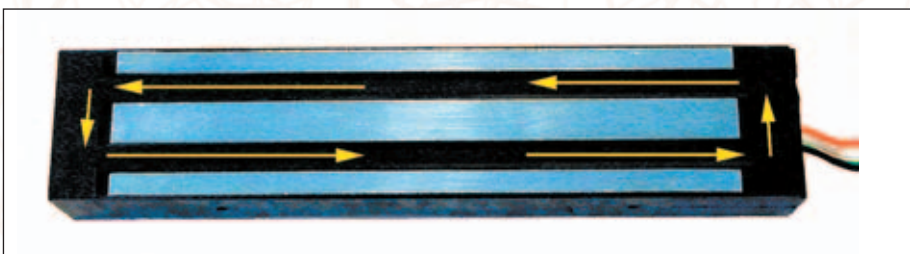
Photograph 10, shows how the wire would be wrapped when viewed from

the top of the metal plates. It just goes around and around, hundreds of times. The reason you can't see the wire is because it is covered with a plastic after the wrapping is complete. The plastic just acts as a protective covering and to hold the wires in place. It does not act as an electrical insulation.

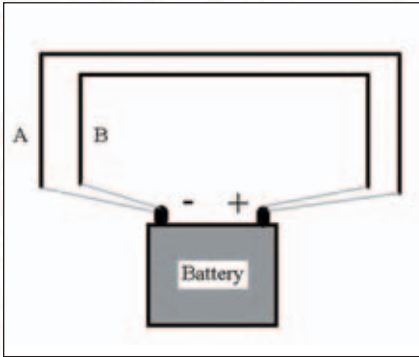
To give you a better idea of how the wire looks after it is wrapped and coated with plastic, I cut one of the mag locks in half. You can clearly see the metal plate and copper wires wrapped around the stack of plates. (See photograph 11.) In the upper part of the photograph, the wires are still held together tightly and are still covered in plastic. In the lower portion of the photograph, I broke away the plastic and spread the wires apart so you can get a good idea just how many times the wire is wrapped around the inside of one of these things.



11. This is the M611 cut in half. It is easy to see how the wire is wrapped around the middle leg hundreds of times.



10. Looking at the top of the magnet, the arrows indicate how the wire is wrapped.

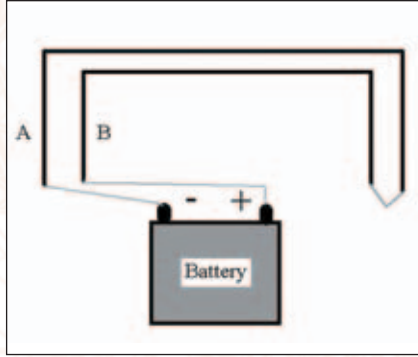


12. Here is a parallel circuit.

I am sure that a few of you have already caught the fact that I have mentioned the word wire and not wires. Well, the truth is that there are two wires wrapped around the inside of this magnet, not just one. Why two wires instead of one? Well that is a good question and deserves a good answer.

Remember earlier when I mentioned that this mag lock can use either 12 or 24 volts DC? This is because there are two wires instead of just one. Let me explain.

When you have two separate wires, you can connect them together in two



13. This one is a series circuit.

different ways. You can use a series or a parallel connection. A parallel connection is when one end of wire "A" and one end of wire "B" is connected to a positive connection on a battery and the other end of each wire is connected to the negative connection. (See photograph 12.)

A series connection is a little different. One end of wire "A" is connected to the positive connection of the battery and one end of wire "B" is connected to the negative connection of the battery. (See photograph 13.) That leaves one end of each wire not connected to

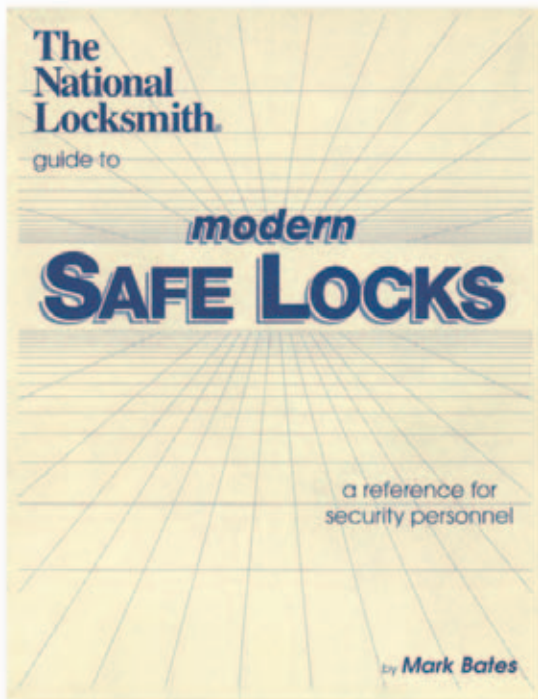
anything. Well, if you take those two ends that are not connected to anything and twist them together, you have just made a series circuit.

Photograph 14, shows a series connection, using the two long wires wrapped around the inside of the horseshoe shaped metal pieces. The arrow points to the two ends of the wires that are twisted together. With a multimeter connected to the opposite ends of the two wires, the resistance of the circuit can be read. As you can see, we have 118.4 ohms of resistance through the entire circuit.

Since we know we have two wires of equal length in the circuit, it is reasonable to expect each wire to have about half as much resistance as the entire circuit.

Photograph 15, shows that there is 61 ohms of resistance in one wire. The other wire will be about the same. I know that adds up to 122 ohms and not 118 ohms like the previous measurement. Can you guess why?

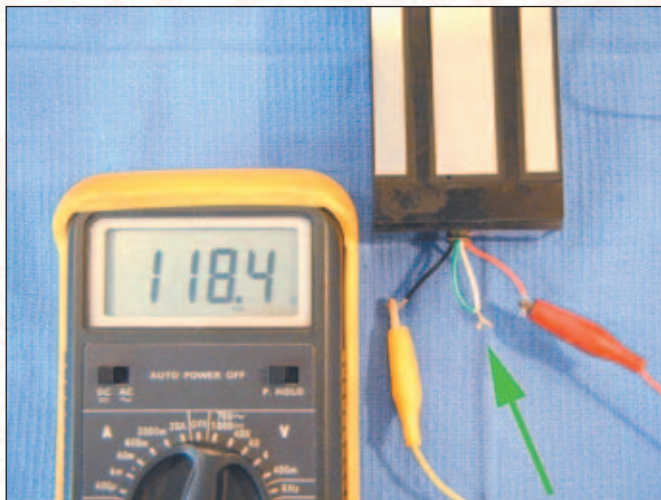
With the resistance of each wire read individually, we also have to read the resistance of the test leads from the multimeter and the clip leads used



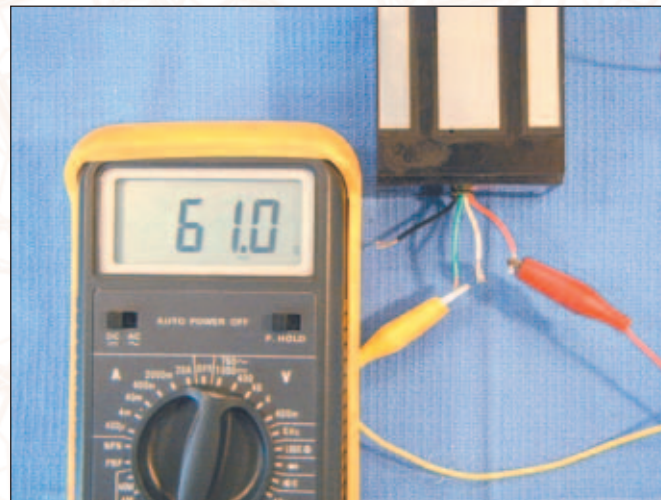
Modern Safe Locks

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14. When the two long wires inside the mag lock are connected in series, there is a total resistance of just over 118 ohms.



15. Since there are two wires inside the mag lock, each wire will have about half of the total resistance.

to connect everything together. This means that the test leads and clip leads are measured twice, not just once like in the series connection. That is why there is a small discrepancy in the reading. Don't worry about the small stuff. Just try to understand the basic concept and you will be fine.

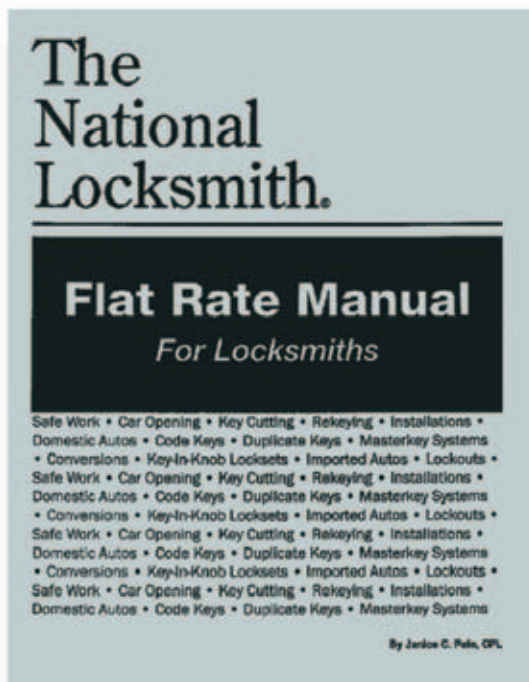
Now that we have covered what is inside an electromagnet, do you really

need to know the science of how it works. Not really. That is for another day and another article. It is enough to say that when current is passed through the wire that is wrapped around the metal plates, the plates are magnetized through induction. You have a magnetic force for as long as electricity is applied. When the electricity is removed, there is no more induction and no more magnet. I

hope this has helped some of you understand the design concepts behind an electromagnet.

YORTEC is located at 20416 East Walnut Drive, Suite 2A, Walnut, CA 91789. Phone: (800) 237-3153 or (909) 595-8512; Fax: (909) 468-2685; Web: www.yortec.com Circle 341 on Rapid Reply.

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#FRM - 1

Open and Do Not Repair!

by Dale W. Libby, CMS



Sometimes safe opening can be fun, as well as profitable. This was one of those times when I thought the safe opening would be easy and profitable. It was, however, not the easiest safe I have ever opened and not the hardest. The contents of the safe æ which caused the problem in the first place æ made the opening a unique, and at one point startling, exercise.



1. Mystery Pneumatic Tube repository container. Where is the lock?

My buddy Little Tommy, was called to open a defective Pneumatic Tube container. The unit had a “T” handle and no sign of the combination lock. (See photograph 1.) On the back side at the top of the safe was a SmartGard Keypad. This safe was programmed with all the bells and whistles imaginable, with remote access audit trails if desired. The keypad would not work, even after several sets of new batteries were changed. Before starting an attack, we ask the customer for a history of the problems with the safe.

Apparently, at 5:00 a.m., a combination was entered into the keypad along with the pin number. The display on the keypad indicated

the safe was open, but the “T” handle would not turn. When the manager arrived two hours later, he received the identical results.

He then proceeded to put a large pipe on the “T” handle, and when the display indicated the safe was open, he turned the pipe and broke the connection to the safes bolt mechanism.

To add insult to injury, the keypad stopped working a little later and nothing could be input. Error messages were all that was showing on the display. (See photograph 2.)

They had a lot of trouble with this unit, but in the past always managed to get it open. Their maintenance man would try to fix the unit each time it malfunctioned. The last time he fixed the unit, he thought it would work better without the cover on, because it kept falling off and caused the door to bind. This is what caused the lockout and all the problems that we were called on to fix.

The manufacturer wanted us to tell the customer that the safe was not repairable and that a new safe should be purchased.

When Tommy and I arrived at the store, the assistant manager met us and stated that this unit was a piece of junk, and hoped that we would advise getting a newer unit like at the other stores where she had worked. She was having nothing but trouble with this unit for the last year and a half. She hoped that we would recommend replacement.

The store manager then met us in the counting room. He pulled us to the side and told us that with our recommendation he could get a new container if we stated that the safe was not fixable. Everyone we met, from the manufacturer to the store managers wanted a new safe. We were

being asked to tell everyone that the safe was not repairable for a reasonable cost, and that a new safe was the answer. We did not let them down. I laid my Milwaukee drill and hole saw on the safe, and in a solemn ceremonial voice stated that the safe was dead, may it rest in peace. Time for the autopsy to see what it died from.

The first thing we decided to do was to make a hole in the side of the safe so we could see as well as work on getting the door open. For this preliminary hole, we used a 2-1/8” hole saw. We wanted a hole that would allow us to attack the lock as well as nudge the bolts back when the lock was defeated. Tommy started the hole just a little above the “T” handle on the side of the safe. (See photograph 3.) This was to be a multi-purpose hole and it was.

Photograph 4, shows Tommy drilling a chip hole on the circumference of the marked hole. This 1/4-inch hole allows the non-build up of chips when drilling with a hole saw. I read this somewhere, and I thank the person who wrote about this trick. I hesitate to name anyone, for I



2. Unit is controlled by the SmartGard keypad.

might get the name wrong again, and we know how much trouble that causes the editorial and publishing staff. (In the end, me, of course as well!)

The hole went quickly and we pierced the side as shown in *photograph 5*. We quickly figured out what went wrong and why the lock failed through our little viewing port in the side of the safe. Before we could really see anything, we had to pry back the Pneumatic Tubes holding change, money, and invoices that were piled against the lock and handle mechanism before we could see anything. This was an exercise in futility. The tubes kept cascading down and blocking out view. After we got them somewhat propped away from the lock and the front of the door, we saw two problems.

The first thing we saw was that the cable to the lock had become disconnected when one or more pneumatic tubes had struck the top of the lock. This was rather strange, for the factory stated that the lock was mounted Vertical Up (VU), and in fact the lock was mounted Vertical Down (VD). With the build-up of tubes in the bottom of the safe, there was a direct slope that all subsequent tubes shot down and hit the lock and the cable connector.

These tubes were heavy, about 1 foot long and 4 inches in diameter. When loaded with stuff, they were heavy, fast moving guided missiles within the safe body. That explained the reason for the keypad display not working. The pad was not connected to the safe lock.

The second reason was the primary reason that the safe lock did not work in the first place. The relocker plate was askew and the relocker was set. That morning, the safe lock was working (?) but because the relock pin dropped down, the movement of the bolt bar was stopped. A tube must have knocked the bolt bar loose or rattled the plate enough to let the roll pin that secures the relocker shot into place. The relocker was set, the lock was not connected, and the cable end was buried in a mass of heavy pneumatic tubes, and the handle roll pin was forced and broken.

As we were looking through the side hole, another tube shot into the safe. The timing was perfect. Tommy and I were deep in concentration and the loud noise of the tube shooting

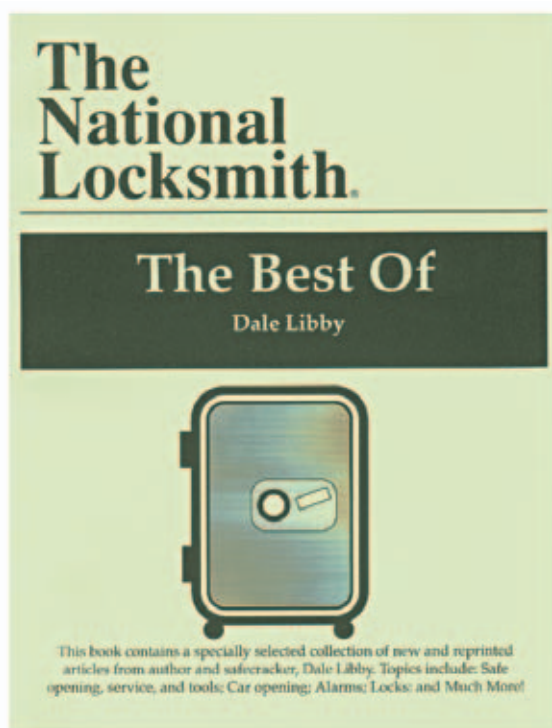


3. Starting the side attack hole near the front of the door.



4. Drilling a relief chip hole at the bottom of the hole outline.

The Best of Dale Libby



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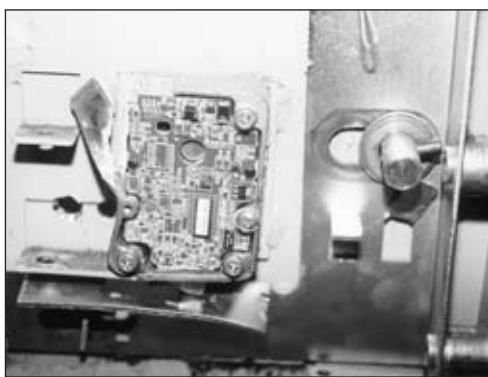
#DALE



5. Finished hole showing the 1/4" thick wall construction.

into the safe and striking the back of the lock made us both jump. The assistant manager apologized and moved a large lever on the top of the safe and inserted a large coil spring above the top of the safe in the large pneumatic glass tube. No more tubes would be shooting into the safe while we were working on the unit.

The tool of choice for working on the lock mechanism was a mini-torsion bar; hand filed, ground, and sharpened into a fine flat chisel point. With the help of Bruno, my hand sledge of many years, Tom and I were able to bend the bolt bar down below



6. Bolt bar forced down beneath end of bolt.

the level of the flat on the end of the combination lock bolt. (See photograph 6.) Now we had to go for the relocker.

I tried peeling the combination lock off the door from the side to expose the relocker bar, or the pin on it to raise it up. One of the door locking bolts was visible and we tried to pry it back through our little side view hole. We could not do it, however. Getting frustrated, I grabbed the Makita battery drill and put a hole where I thought the relocker would be. I was 1/2-inch off. I just could not raise the relocker enough from the first hole.

Using my drill and a 3/8" bit, I drilled the relocker into two parts. The bottom part fell through the hole in the base plate, and the top part of the bar flew into the massed pneumatic tubes. A little gentle touch of the mini-torsion bar on the edge of the exposed bolt moved the mechanism into the open position.

When asked what the problem was, we just stated that there was a lock malfunction. We did not point out that by removing the back cover plate to the door, let the tubes strike the rather delicate parts of the electronic lock, nor did we belabor the point that if the handle does not turn easily, it is not acceptable to put a pipe on it and try to force it open. In fact, in *photograph 6*, you can see the tab below the handle spindle to the right of the lock, has been bent up. This in fact, was in the closing direction for the bolts, and not the opening direction.

Everyone came out happy on this one. We billed the safe company for a service call and 1 hour labor. The store has probably already gotten a new safe with a new back cover on it. Open and Prosper!



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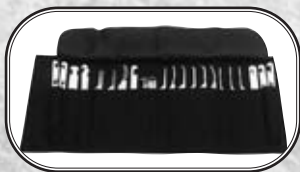
17th Prize

Major Manufacturing's
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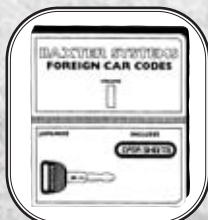
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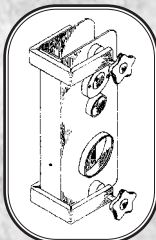
21st Prize

Sieveking Products
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Rodann's RV500 Wireless
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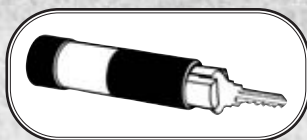
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Tryout Key
Progressions**

While recovering from a broken arm and leg last summer, I decided to make up lists of tryout keys for various vehicles. On all of the cuts, use 1/2 depths, that is: A 1 depth is cut as 1/2. A 2 depth, is cut to 1-1/2, a 3 depth is cut to a 2-1/2 and a 4 depth is cut to a 3-1/2.

GM 10 cut - Spaces 6 through 10. Total blanks needed: 32 double-sided, cut bow to tip:

22222, 22224, 22242, 22244, 22422, 22424, 22442, 22444, 24222, 24224, 24242, 24244, 24422, 24424, 24442, 24444, 42222, 42224, 42242, 42244, 42422, 42424, 42442, 42444, 44222, 44242, 44424, 44442, 44444.

The following cuts are for GM 10-cut locks, spaces 3 through 9; Chrysler Y157 pre-1998 7-cut door and Chrysler Y-159 post 1998+, cuts 2 through 8, for the door. Cut bow to tip. This series will require 102 blanks. Again, these are true double-sided, so use the same cuts on both sides of the key, cutting 1/2 depths as specified.

2222222, 2222224, 2222242, 2222244, 2222422, 2222424, 2222442, 2222444, 2224222, 2224224, 2224242, 2224244, 2224422, 2224424, 2224442, 2224444, 2242222, 2242224, 2242242, 2242244, 2242422, 2242424, 2242442, 2242444, 2244222, 2244224, 2244242, 2244244, 2244422, 2244424, 2244442, 2244444, 2422222, 2422224, 2422242, 2422244, 2422422, 2422424, 2422442, 2422444, 2424222, 2424224, 2424242, 2424244, 2424422, 2424424, 2424442, 2424444, 2442222, 2442224, 2442242, 2442244, 2442422, 2442424, 2442442, 2442444, 2444222, 2444224, 2444242, 2444244, 2444422, 2444424, 2444442, 2444444, 4222222, 4222224, 4222242, 4222244, 4222422, 4222424, 4222442, 4222444, 4224222, 4224224, 4224242, 4224244, 4224422, 4224424, 4224442, 4224444, 4242222, 4242224, 4242242, 4242244, 4242422, 4242424, 4242442, 4242444, 4244222, 4244224, 4244242, 4244244, 4244422, 4244424, 4244442, 4244444, 4422222, 4422224, 4422242, 4422244, 4422422, 4422424, 4422442, 4422444, 4424222, 4424224, 4424242, 4424244, 4424422, 4424424, 4424442, 4424444, 4442222, 4442224, 4442242, 4442244, 4442422, 4442424, 4442442, 4442444, 4444222, 4444224, 4444242, 4444244, 4444422, 4444424, 4444442, 4444444.

The following is for the 8-cut door locks for Nissan using the X123 and X210 blank and the Toyota X217 (Be careful with split wafers). These locks are true double-sided, so you need to cut the same depths on both sides of the key. Cut bow to tip. A total of 164 blanks are needed.

A Few Words From Jake...

Just before I sat down to compile this month's Technitip column, I was working on the manuscript of a book. When I tried to back up some files, I lost about twenty pages of my manuscript! Since I'm as close to computer illiterate as one can be and still do things that I need to have done (most of the time, anyway), it was quite an interesting time spent trying to recover the lost material.

After a few, heartfelt, "Golly, gee's!" I finally stumbled on a "Recovered Document" file. When I opened it, all I had on the screen were a bunch of symbols, not my twenty missing pages. So, I went looking, and looking.

I finally, went to "Edit," pushed "Select All" and then went back to Edit and pushed "Paste Special." The next thing I knew, my document was on the screen! Not in the format that I was working with, but by Golly, it was there! So, what's the point?

The point is: Finding the answer to a real toe-stubber of a problem - for me anyway - with my computer is no different then what we do everyday as locksmiths. Something happens that shouldn't and we try to figure out why, and then we figure out a solution.

Sometimes those solutions are just good common sense, sometimes they require deep thought, and sometimes, we design, make or modify a tool to implement the solution that we developed.

The next time you are figuring out a neat way to save some time, make the job go easier or use a tool in a different manner, you need to write it down and send it to me. If I print your tip, you'll get free goodies. If you need extra incentive, you'll be eligible for the year-end prize drawing as well. So, start noodling and write down your favorite trick, tip or idea and send it on to me

See y'all next month.



by Jake
Jakubowski

22222222,	22222224,	22222242,	42244422,	42244424,	42244442,
22222244,	22222422,	22222424,	42244444,	42422222,	42422224,
22222442,	22222444,	22224222,	42422242,	42422244,	42422422,
22224224,	22224242,	22224244,	42422424,	42422444,	42424222,
22224422,	22224424,	22224442,	42424224,	42424242,	42424244,
22224444,	22242222,	22242224,	42424422,	42424424,	42424444,
22242242,	22242244,	22242422,	42442222,	42442224,	42442242,
22242424,	22242442,	22242444,	42442244,	42442422,	42442424,
22244444,	22422222,	22422224,	42442442,	42442444,	42444444,
22422242,	22422244,	22422422,	44222222,	44222224,	44222242,
22422424,	22422442,	22422444,	44222244,	44222444,	44224222,
22424222,	22424224,	22424242,	44224224,	44224244,	44224422,
22424244,	22424422,	22424424,	44224424,	44224444,	44244444,
22424444,	22444444,	24222222,	44242222,	44242224,	44242242,
24222224,	24222242,	24222244,	44242244,	44242422,	44242424,
24222422,	24222424,	24222442,	44242444,	44244444,	44422222,
24222444,	24224222,	24224224,	44422224,	44422242,	44422244,
24224242,	24224244,	24224422,	44422422,	44422424,	44422442,
24224444,	24242222,	24242224,	44422444,	44442222,	44442224,
24242242,	24242244,	24242422,	44442242,	44442244,	44442444,
24242442,	24242444,	24244222,	44444222,	44444224,	44444242,
24244224,	24244242,	24244422,	44444244,	44444422,	44444424,
24244442,	24244444,	24444444,	44444424,	44444442,	44444444.
42222222,	42222224,	42222244,	<p>I know it sounds like a lot of blanks, but at around 40 cents per blank, it's cheaper than buying tryout sets. If you're just starting out and have a little time between calls, it may be worth your time.</p> <p>Joan Yarrington Texas</p>		
42222422,	42222424,	42222442,			
42222444,	42224222,	42224224,			
42224242,	42224244,	42224422,			
42224424,	42224444,	42242224,			
42242242,	42242244,	42242422,			
42242424,	42242444,	42244222,			
42244224,	42244444,	42244422,			
42244424,	42244442,	42244444,			
42244442,	42244444,	42244444,			
42244444,	42244444,	42244444,			
42244444,	42244444,	42244444,			

Editor's Note: Joan, I know you put a lot of work into this and it is another tool that a locksmith can use if they want to make up these sets. However, I wonder if one would not be further ahead by purchasing Bob Sieveking's book on wafer reading? Or, a set of Determinators or H. E. Mitchell's Readers. My personal choice would be the wafer reading. Glad to hear you're back up and running. Take care, and thanks for the tip.



**WEDGE CO KEY
EXTRATOR WINNER:
Chevy Van
Opening Trick**

On Chevrolet vans with the thumb push button locks, (rear door only), opening when locked can be accomplished with a piece of spring steel.

I use spring steel that is about 3-1/2" long, 5/16" wide and .018" thick.

It's best to clamp Vise-Grips® on one end of the spring steel because you have to push with some force.

Insert the steel shim along side the push button on the lock (on the right side) and angle it down about 20 degrees and feel for the locking assembly inside the rear door. You will know when you have contacted it because it will spring back when you push it. Give it a good strong push and while you continue to hold the pressure, open the door with the other hand.

This method does not unlock the door, but it does get you in.

I'm almost ashamed to admit it, but I learned this after I locked my keys in my van while on a service call! All my tools, of course, were inside my van, except my steering wheel tear-down kit and it happened to have the necessary spring steel and Vise Grips®.

*Robert A. Williams
California*



Photograph 1



**STRATTEC WINNER:
Allen Wrench Tip**

I hate having to grab four or five different Allen wrenches when I'm not sure which is the exact size or if it is standard or metric? I also don't care for the folding wrench sets.

To solve the problem I take a wrench and plastic tag with its use written on it. I put the tag and a small piece of shrink tubing on a small give away ring, slip it on the wrench and heat the tubing to attach. (See

photograph 1.) This saves a lot of searching for right Allen wrench.

*Stan Moffett
Arizona*



**HPC WINNER:
ADA Selling Tip**

Until recently, I was unaware that the government helped pay for ADA compliance. Then I came upon this information which may help you make a sale by pointing out that with this tax credit program, your customer can possibly reduce their out-of-pocket

Ultimate Safe Opening Collection



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#USOC - 1

costs of compliance with the mandates of the ADA.

Apparently, the federal government offers a tax credit for up to half of the ADA compliance expenses over \$250 per year and up to \$10,000, for eligible small businesses that own or lease pre-1990 buildings where ADA upgrades are required.

The IRS form for this tax credit is Form 8826. Advise your customer to check with their tax advisor for details and how the tax credit can benefit them.

This knowledge just might help you clinch a sale you might normally miss.

*Arnie Bell
California*



**SARGENT &
GREENLEAF WINNER:
Impressioning with
A Code Machine**

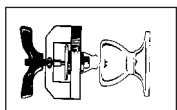
When impressioning a key, don't use a file if you have a good code machine around. Prep your key by cutting to the highest depth with the machine. This will give you a good shinny surface to see the marks made by the pins.

If you get a mark, use the code machine and cut it down to the next depth. Also, widen the cuts instead of just using a "V" cut. That gives you more surface to see.

This will work best on locks that are keyed to factory depths. If the lock has been rekeyed to different depths, just cut about .007 deeper each time you get a mark.

Try it, it works!

*Mike Gambill
Kentucky*



**A-1 SECURITY
PRODUCTS
WINNER:
Quick Pin Finder**

I have a .003 Lab pin kit I have used for over 20 years. I have cardboard inserts that I made from stock that is used to make manila file folders. Each insert is cut to the exact size of the pin kit and then has individuals squares cut out to correspond with the proper length of pins I am working with for that particular lock.

For example, for a Schlage I have small squares cut out, so when the insert is laid over the top of the pins

there are openings at .180, .195, .210 etc. and openings at .030, .045, .060 etc. Each opening is numbered with the length of pin it represents.

This way I don't have to have a dedicated pin kit for a particular brand of lock and I don't have to waste time looking for the right pin in an all-purpose pinning kit. I can go right to it and pick it up. I have made inserts for all the popular locks I work with: Schlage, Kwikset, Weiser, Weslock, Sargent, Corbin-Russwin etc.

*Dan Cunningham, CRL
Washington*

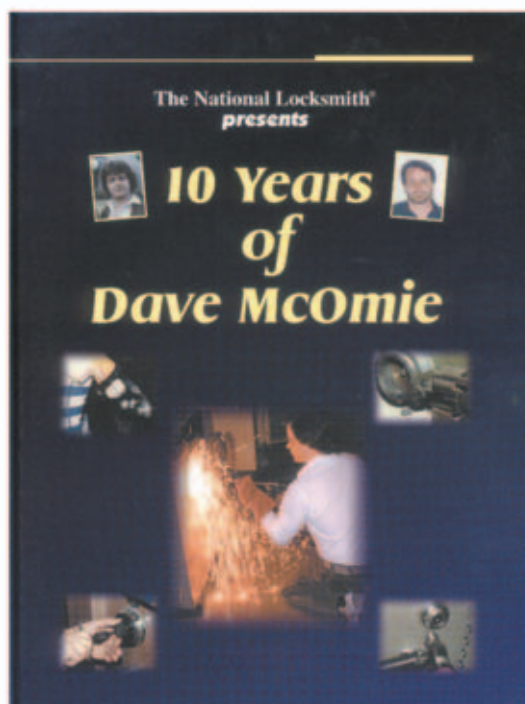


**ILCO KEY BLANKS
WINNER:
ViseGrip® Turning
Tool**

If you have Ford tryout keys with the small head, they often don't allow enough turning force when using just your fingers. Use small vice grips to hold your Ford tryout keys as you try them. I've had two Ford ignitions this month that wouldn't turn until I used the small vice grips to hold the tryout key and applied moderate turning pressure.

*George Henderson
South Carolina*

10 Years of Dave McOmie



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#DM - 10



KEEDEKX WINNER:

Ford Ranger Tire Lock Key Tip

The H83F blank for the Ford Ranger spare tire lock is about 5" long, most of which is a plastic shaft and bow with the key blade embedded in the end.

A used car dealer who called me, said a local new car dealership he checked with first was "not about to spend \$500 for a special code cutter designed only for this key." But he needed a code-cut key for a Ranger and wondered if I could help. He had

removed a lock and key from another Ranger so I could look at it.

I have a HPC 1200 punch machine and my code software had the codes.

I ordered the blanks and used the HPC 1011 punch set and micrometer card with the left hand insertion. The blank's plastic shaft ends too close to the first space and hits on the punch's base plate. To overcome that obstacle, I trimmed a small diagonal piece out of the plastic on each side of the blank at the blade end (its a double-sided convenience key.) This allowed the blank and plastic shaft to clear the

obstruction caused by the plate for either a two or three cut in the first space.

This modification to the blank would not have been necessary if the first cut had been a number one depth since no cut is required. Incidentally, measurement of depths two and three on the dealer's sample key varied by several thousandths from the code record, so I cut an experimental key first. It worked perfectly, so I stayed with the code.

The dealer reported the code key worked perfectly and expects to place more orders as Rangers come off-lease and onto the secondary market without these keys. I tagged the experimental key with its proper code. Since the series is F01-25, its bound to sell sooner or later.

*Ralph Iden
Michigan*

How To Re-Key Cylinders



This software simplifies the process of re-keying various types of cylinders.

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#HT - RKC1



Photograph 2

**TECH TRAIN TRAINING VIDEO
WINNER:**

Shopping Cart Conversion



I salvaged one of my wife's old shopping carts and converted it to a mobile work station and toolbox carrier. (See photograph 2.)

By simply adding a small bracket at the bottom for the toolbox and attaching a small, collapsible worktable for the vise, it makes this a very handy work station.

With the table in the collapsed position, it fits very nicely into my Astro Van, right next to the side door.

*John Terwolbeck
Canada*



**SIEVEKING
PRODUCTS GM E-Z
WHEEL PULLER
WINNER:**

**Shear Head Bolt
Removal**

I'm using an automatic center punch to remove the shear head bolts from automotive steering lock harnesses, as opposed to drilling them out. I use a Dremel® Tool to cut a slot in the "head" of the bolt or use a punch and hammer to give my automatic center punch something to grab.

Simply start using the automatic punch on the edge of the bolt and punch in the direction to unscrew the bolt. It works really well.

*Chris Shook
E-mai*

Major
MANUFACTURING, INC.

**MAJOR
MANUFACTURING
PRODUCTS
WINNER:**

Spindle Drilling Information

If you encounter a badly burglarized Star door, use a 3/4" or 7/8" drill bit, or the largest one that will fit through the spindle hole without hitting the hard plate, and drill straight down. This will cause the wheels to disconnect from the driver (and spindle) and grab the cam, which in turn, will pull the bolts into the unlocked position.

*Mike Prince
E-mail*



**SLIDELOCK'S "Z" TOOL
OPENING SET WINNER:**

**Poor Boys Auto
Opening Light**

A company by the name of The Great Outdoors sells a fishing rod clip on light, Item #9-27173. This little liquid light can be clipped onto auto opening tools easily and is bright enough in dark spaces to help you find your way around in a door panel.

Checkout their web site at www.omniglow.com.

*Tom LaRue
New York*



**THE SIEVEKING AUTO
KEY GUIDE WINNER:**

Alternative Tool Trick

While on a job installing a double door electromagnet, I couldn't find my flat tip jewelers screwdriver to close the wire terminal connector.

Without that little screwdriver, completion of the job was at risk. Not wanting to travel another 140 miles, I grabbed my A1 Plug Spinner and locked the tip into place. It fit into the screw terminal perfectly and quickly turned it down without any trouble.

The plug spinner worked so well, that I may not replace that small jewelers screwdriver!

*Frank Sterois
New York*



Photograph 3



**JET KEY BLANKS
WINNER:**

**Marking Screw
Locations with
Drill**

When marking for the center of a latch or latch plate for mounting, just use your Phillips bit that you will be putting the screw in with. (See photograph 3.) Simply hold the latch plate where you want it, and spin the bit. It works great!

*Bill Chrisman
Virginia*



**HIGH TECH TOOLS
WINNER:**

The Hinge Doctor

I've been reading the Technitip column for years and have garnered a lot of useful information from the tips that various locksmiths have sent in. I've also read a lot of your columns

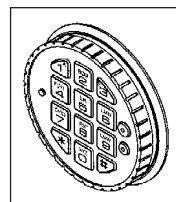
about "alternatives" for making money.

Recently, I heard you mention that one of the best money makers you had seen lately was the Hinge Doctor. So I decided to order a set from my supplier.

My tip is this: If any of your readers are looking for an easy way to pick up an extra forty or fifty dollars when they service a metal door that is sagging or binding, this is the tool they can do it with. Mine have more than paid for itself in a very short period of time.

*Glenn Starling
Florida*

Editor's Note: Glenn, over the years you have sent in several good tips. Although this one borders on a commercial for Hinge Doctor, I decided to print it anyway because the product is every bit as good as you say it is. For those of you who would like to find out more about the capabilities of Hinge Doctor, call your favorite supplier. You won't be sorry.



LAGARD WINNER:

**Sentry Safe
Opening**

Here's how I open a Sentry V560 with a digital lock on it when the combination is lost or will not open the unit.

If I have a key, I drill a small hole (no more than a 1/4") 6-5/8" down from the top and 1-3/8" back from the front, on the right side of the safe. I use a rod and push the program button two times. The program button is located 5-1/2" back from the side of the safe. Then I enter a new five-digit code.

This programs the lock with a new code. Then I enter the new code, turn the key and open the safe.

If there is no key available, I pick the lock. Even though this lock is a four-sided lock similar to a Club lock, it can be picked and I usually can pick one in under five minutes.

At any rate, these safes are rather easy to open.

*James Amundson
California*

TRL



1999 BMW R1100GS

Part 2

by John Blankenship



Concluding this series covering the seat and ignition lock.



1 The seat lock is located on the left side of the motorcycle below the seat and above the end of the exhaust pipe. The luggage mounting rack obstructs the use of The Determinator(tm) in this lock, although it will work if the motorcycle is not equipped with luggage. I was unable to pick this lock.



2 The seat lock plug is easily removed by inserting a hook dental pick 7/8" into the keyway, pulling the retainer down, and pulling it out. The plug in this lock is identical to the plug in the helmet lock.



3 You can gain direct access to the seat lock plug retainer if you need to. First remove the two small Phillips screws on the front of the seat lock (see photograph 17). Then turn the seat lock 20 degrees counter-clockwise and hold it while you lift the rear of the seat up. Then pull the seat back and off the motorcycle.



4

Depress the latch at the rear of the tool tray cover and lift it up to remove it.

Use a 5mm hex key to remove the center bolt in the rear of the tool tray and it can be removed.

5



6

Use a 5mm hex key to remove the seat lock mounting bolt that is located next to the latch housing.

Sieveking Auto Key Guide

The Sieveking Auto Key Guide lists over 2,600 automotive and motorcycle keyways, covering makes from Acura to Zundapp, and listing fourteen popular key manufacturer numbers.



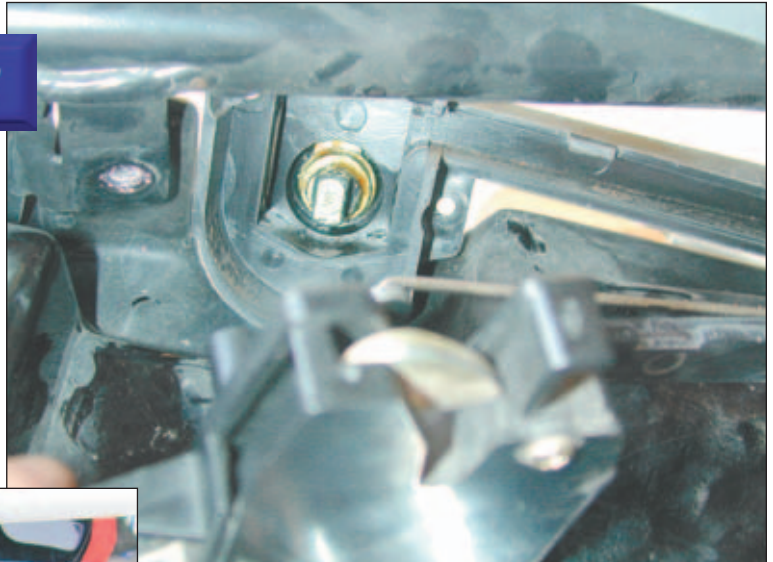
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#AK - 1



Pull back the latch housing while gently unsnapping the housing for the linkage rod that runs forward to the front seat latch. You can now depress the retainer and push the plug out the front.

7



8

The luggage is keyed the same as the rest of the locks. The locks use the same plug as the helmet and seat locks, although I was able to pick both luggage locks due to the loose fit. The Determinator(tm) will work in this lock if you clean the grease out good.



The plug is easily removed by inserting a hook dental pick 7/8" into the keyway, depressing the retainer, and pulling it out. Pull the retainer away from the center of the motorcycle.

9

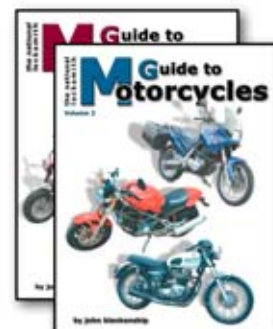


Guide to Motorcycles Vol. 1 & 2

For years locksmiths have begged for a comprehensive service manual on motorcycles and its finally here!



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10

To remove the luggage from the motorcycle, turn the plug 90 degrees counter-clockwise, pull up the handle, and lift the luggage up and off the mounting rack. You have to relock it before the key can be removed.



The luggage is shown removed from the motorcycle.

11

IC Cores: Small Format

Everything you ever need to know about how to sell, service, install and troubleshoot interchangeable cores!



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#ICSF - 1





12

To open the luggage, unlock it and raise both the handle and the lever.



13

The standard way to remove the plug is to unlock it, raise the handle and lever, and use a punch through the poke hole to depress the retainer so the plug can be pulled out.

High Security Safes Vol. 1 & 2



Learn to open High Security Safes now!

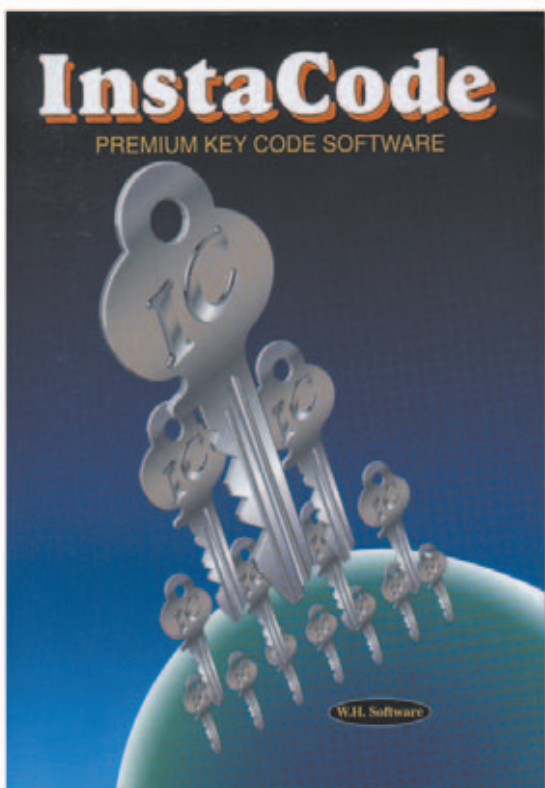
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The ignition/steering lock is shown in the 'R' or 'ignition off' position. A slight turn clockwise turns the ignition to 'ON' and turning it 90 degrees counterclockwise turns it to 'OFF' or 'steering locked' position. Turning it farther counter-clockwise turns it to 'P', which turns on the taillight. The Determinator(tm) can be used in this lock to find the depths of all eight spaces if the grease does not prevent the wafers from moving freely. There is a lot of grease in this lock and I had trouble getting good readings.

To remove the plug, turn the ignition to 'ON' and use a poke tool to depress the retainer so it can be pulled out. The rectangular poke hole is located on the front of the ignition lock as shown. You can use a screwdriver to turn the ignition off so you don't run down the battery while you work with the plug. The plug can be inserted in the 'R' position as well as the 'ON' position.



#IC - 2002

InstaCode 2002

InstaCode 2002, the latest release of InstaCode, includes over 5000 code series covering general/utility, padlock, vehicle and motorcycles.



[CLICK HERE TO LEARN MORE](#)

16

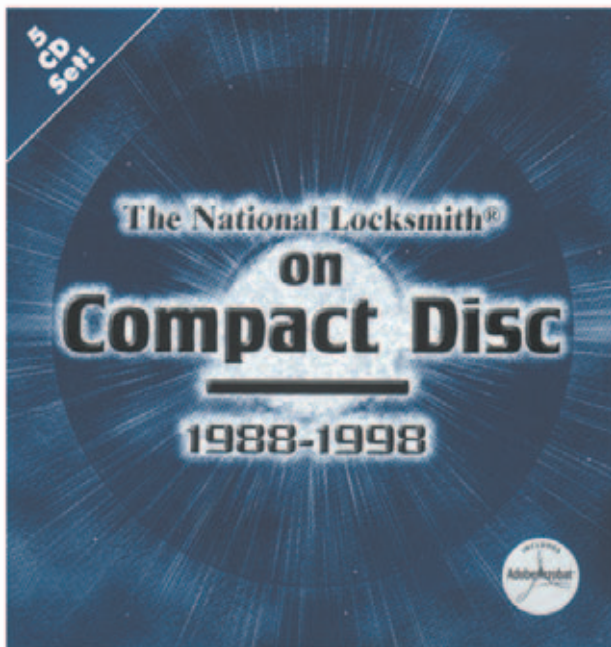
The ignition lock uses the same plug as the helmet, seat, and luggage locks, but it is set up differently. It contains all eight wafer tumblers with the odd spaces on the bottom and the even spaces on top. The retainer fits into a hole that runs through the back of the plug.



17

The ignition lock wafers from left to right are depths of 21123312 and are numbered per depth. These are different from the wafers in the rest of the locks. However, you can buy service kits for the locks on this bike that include the plug, retainer, springs, and enough wafers to key the lock to any code. They are available from the parts department of BMW motorcycle dealers

Continued on page 103



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Continued from page 99

The part numbers and prices are as follows.

Ignition: 51252337268, \$17.75

Gas Cap: 51252337269, \$17.75

Seat: 51252337270, \$23.95

Helmet: 51252337270, \$23.95

Luggage: 51252337270, \$23.95



18

All of these blanks will work on this motorcycle. From left to right they are; bowless original, original, Silca BW7BP, X59 (BMW2), and X144 (BMW3).



19

The X59 and X144 with cuts of 21123312 turn all of the locks smoothly. The original key is on the right.

Codes: H12353P-H53425P

Blank: Ilco: X59 (BMW2); Silca: BW7BP

Spacing: 1=.106, 2=.189, 3=.272, 4=.354, 5=.437, 6=.520, 7=.602, 8=.685

Depths: 1=.327, 2=.303, 3=.280

HPC Card Number: XF33

ITL Number: 62

Tumbler Locations: 1 2 3 4 5 6 7 8

Ignition: x x x x x x x x

Gas Cap: x x x x x x

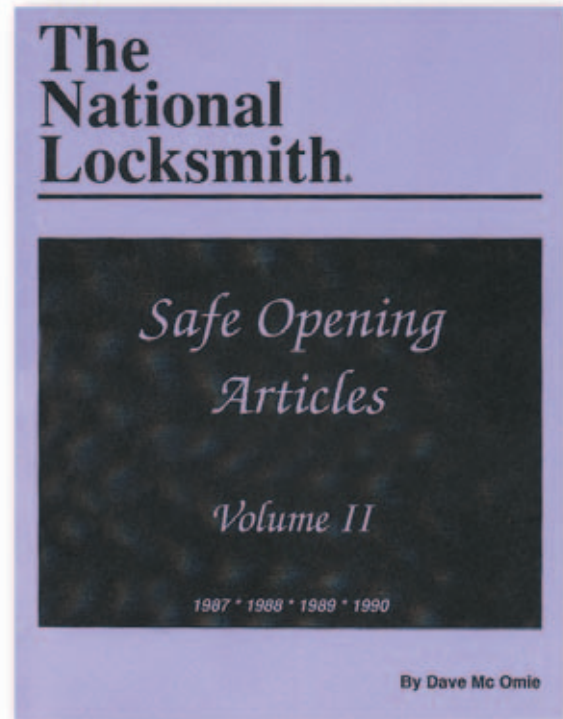
Seat: x x x x x x

Helmet: x x x x x x

Luggage: x x x x x x

TNL

Safe Opening Articles



Dave McOmie's original articles from when he first started writing for The National Locksmith are reprinted in this book.

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Understanding Electronic Access

Control Part Two

by William C. Deutsch



Last month, we embarked on an introduction to Electronic Access Control. After a brief discussion of the purposes of an EAC system, we started to look at the components common to every installation. There was only enough space to consider the *credential*.

Let's complete the subject by looking at readers, controllers, locking hardware, interconnections, and reporting.

PROX READER

The two most common types of readers are prox (short for "proximity") and contact readers.

A prox card contains an electronic circuit and an antenna. The prox reader emits a constant magnetic field. When the antenna passes through that field, it produces a voltage on the antenna (a phenomenon called "induction"). This voltage briefly powers the electronic circuit, which then talks to the reader.

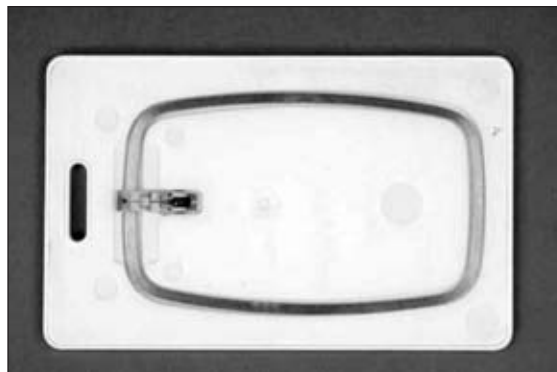
Photograph 1, reveals the inside of a prox card. Notice the small circuit board and the relatively large coil of wire that forms the antenna.

When the prox card talks to the reader, it gives out its ID number. The reader then passes the ID on to the controller.

CONTACT READER

Contact readers house positive and negative pins or contact points, which must touch an EAC credential.

Photograph 2, shows a Medeco® SiteKey® reader. The two brass pins located inside the "keyway" are the data contacts. Notice the stainless steel contacts on the bow of the SiteKey credential. (See *photograph 3*.) When these contacts touch the brass pins on the reader, the ID number stored inside the key is passed on to the controller.



1. The inside of a prox card.

Here the inner workings of the credential are laid bare. (See *photograph 4*.) The ID number is stored inside an iButton®. The iButton's circuitry is completely armored in stainless steel, making it virtually impervious to the elements. That is one reason this particular credential comes with a lifetime warranty.

Contact readers represent the ultimate in security. Not only are they physically robust, but there is no chance that the credentials can be energized and read from a distance.

CONTROLLERS

As I've mentioned twice already, the user ID from an EAC credential must be passed on to a controller. The controller is sometimes called the central processing unit or CPU. As the brain of a system, the controller's job is to read the incoming data and decide what to do with it. Should I unlock the door? Should I hold the door closed and beep accusingly? Should I trip a snare net? (Hey, it's physically possible.)

To make these decisions, the controller stores a list of authorized users and their access privileges. It also holds information about the door being controlled, such as how long the door may remain unlocked after access is granted.



2. A Medeco® SiteKey® reader.

Continued from page 104

How To Pick Locks



With both learning software and tool set, you'll have everything you need to learn and perform the art of skilled lock picking.

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3. Stainless steel contacts on the bow.



4. The inner workings of the credential.

INTERCONNECTIONS

As I mentioned last month, there are two types of controllers: hardwired, and standalone. Hardwired controllers need to be connected directly to the PC that programs them. Because of this physical connection, updates - such as deleting a user - can be accomplished instantly. Speed comes at a price, however. Because of the time and expertise required to run data cables between controller and computer, the installation can get costly and time consuming.

If up-to-the-second control is not necessary, stand alone systems really shine. While stand-alone units often require a PC for programming, the data can be hand carried to the door, with a laptop, palm top, or simple programming devices.

Because they are easier to install, standalone devices represent the best opportunity for locksmiths to enter the EAC field.

Let's pause for a free selling tip: if you are doing locksmith work for a facility that already has a hardwired EAC system installed, don't think you've missed the opportunity to install standalone access control.

When your customer wants to add a door - say to a remote storage area or a new computer room - the cost of pulling data lines to the door can be steep. Often a single door can run \$3,500 or more. That's where you come in. You can offer to install a standalone device for about half that much. And if your credential of choice happens to be a SiteKey, which attaches to the mechanical key your customer already carries, you may get your foot in the door (bad pun, I know) faster than you expected! "Hybrid" systems that mix standalone and hardwired access control are becoming more common.

LOCKING DEVICES

If controllers are the brains of EAC, locking devices are definitely the brawn.

The purpose of the locking device is to release the door when the controller tells it to. Just as important, it must hold the door locked when the premises need to be secured.

The most popular locking devices are electromechanical. This means that they operate with a combination of electromagnetism and mechanical action. Since I've dealt with electromagnetic devices in a recent article, I'll do no more than point your attention to *photograph 5*, which pictures the Medeco HD 8000 strike. It carries a Grade 1 fire rating, which means it can be used with three hour, A-rated doors, and a Grade 1 rating for burglary resistance; a brawny locking device if there ever was one.

SELF CONTAINED SYSTEMS

To install many stand-alone EAC systems you must take all of the components described above, wire them together, and mount them in



5. A Medeco HD 8000 strike.



6. A self-contained system.

various spots around the door. An electric strike is typically mounted in a doorframe; the strike must be wired back to the controller; the controller is then wired to the reader. You will also need a power source - usually an AC transformer - wired to the controller.

Self-contained systems are becoming increasingly popular. Self-contained systems house all of the above components in one unit. Such a device is pictured in *photograph 6*.

This unit is the Medeco Intelligent Lockset(tm). The reader is mounted directly on the door. It slides easily into a 2-1/8" deadbolt hole to facilitate retrofit installations. The locking device is a motorized, Grade 1 leverset. The controller and power supply (four "AA" batteries) are contained in a black housing on the inside of the door.

Self-contained systems offer some obvious advantages. First of all, the installation is fast. Self-contained systems bolt directly to the door. The electronic components snap together, usually with molded connectors. The installation is intuitive. The installation requires drilling 2-1/8" holes in a door and mounting hardware. As a locksmith, you are used to this type of work.

REPORTING

One of the most powerful features of an EAC system is their ability to provide a detailed report of all activity at a door. This report is called an "audit trail." A good audit trail will tell you who entered a room and when, as

well as tipping you off as to whom may have tried to enter.

The simplest EAC systems use Windows based software to produce convenient on-screen or printed reports.

HOMEWORK

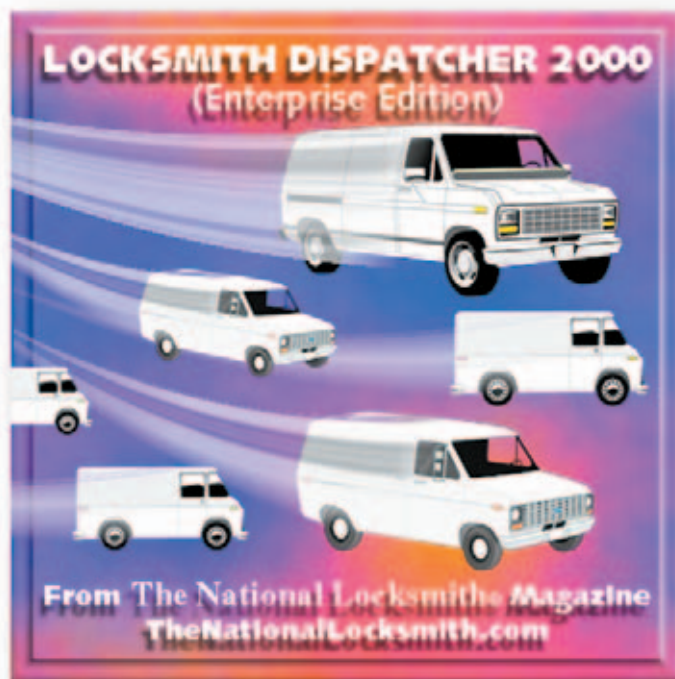
So here's a little assignment before we reconvene next month. Hunt up as many EAC manuals as you can find. Now that you understand the components, reading various manuals will help you understand the mechanics of programming and installation. In

addition, check out a very helpful book by Joel Konicek and Karen Little. Their Security, ID Systems, and Locks is subtitled The Book on Electronic Access Control. It is a clear, well-written overview of EAC technology. Butterworth Heineman publishes the book, and you can buy it through Amazon.com.

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Bump Keys



by
Sal Dulcamaro,
CML

As locksmiths, most of us have to deal with lockouts from time to time. There are many different ways to open a locked door, when the key is not available. Personally, I feel more at ease confronting a lockout when I have more than one possible opening technique at my disposal. Over the years, I have learned a variety of bypass and picking (manipulation) methods for the many types of locks that I confront in my job.

Lock opening skills vary widely from locksmith to locksmith. Even with practice, some locksmiths will still be more skilled and proficient than others will. More than just skill at specific techniques, the number and variety of opening methods known by some locksmiths give them a material advantage over their peers. Some methods, often less well known than others, may be more efficient than other means of defeating a lock.

One of the more obscure lock picking methods involves using a specially cut key as one of the tools for picking. I can't remember how far back it was when I first learned this method of lock opening, but it goes by different names. Probably the most common name is "Bump Keys", although I first had it described to me as the "99999" key. As I describe the key preparation and picking process, you'll understand the origin of both names. I wouldn't be entirely surprised if this opening method, witnessed by amazed customers, was connected to the mythology of the "Master Key" that opens every lock.

Recycle Your Miscut Keys

Photograph 1, shows a small sampling of Bump Keys. From left to right you'll see the following keys cut to their deepest depths in all five cut positions: DE6, KW1, SC1 and Y1. Versions of these keys can be made for most pin tumbler lock keyways.

The picture of deep cut keys may have already suggested to you the origin of the name "99999" keys. Except for the Kwikset (KW1) key, the others all have ten depth increments with the deepest cut being #9. A "99999" key, therefore, identifies the key biting. Kwikset, by contrast, has six depths with #6 being the deepest (not counting construction keying). Because they use the deepest cut depths in every position, you now have a very good use for miscut keys that you might otherwise just throw away. See, even keys can be recycled. From this point forward (to avoid confusion), I will just use the term "Bump Keys". I still haven't explained the process, yet. For those of you who are waiting in suspense, it's coming.

The Principle of Bumping

It is possible to know and understand a mechanical principle, but not be able to accomplish the task. In the NFL, most kickers understand the basic mechanics of kicking a field goal. Some kickers, though, do it a lot better than the others do. There are factors such as skill, coordination and touch that will affect your ability to physically accomplish something that you understand in principle. I will do my best to explain the process here, but practice and experimentation are the ways that you will ultimately develop some level of skill and proficiency.

Using Bump Keys to pick locks is similar in principle to using a pick gun. When using a pick gun, you insert the

needle/pick into the keyway just below the bottom pins and pull the trigger. The action of the trigger causes the needle to quickly strike the bottom pins that, in a chain reaction, strike the top pins. The bottom pins stop moving while the top pins propel upward. That causes separation at the shear line.

It seems to operate along the same principal as that "toy" I remember from years ago where you have five metal balls hanging in a row. If you pull back and drop a ball hanging at one end, the striking action of that ball causes the ball at the other end to propel outward while the remaining balls stay motionless. Billiard balls behave in a similar manner. After the cue strikes the cue ball, that white ball travels across the pool table until it strikes another ball. Upon impact the cue ball stops in its tracks and the ball it hits is propelled into motion across the table surface.

Let's go back to the process of picking with a pick gun. The separation between the top and bottom pins lasts momentarily. The gap is quickly closed. In that brief time, though, it is possible to rotate the plug since the shear line is clear of any obstruction by tumblers. If you can manage to apply rotational force in that instant, you can unlock the lock. When using a pick gun, a turning tool (aka tension wrench) is used to apply that turning force. The concept and operation of picking with Bump Keys is similar, but they do work a bit differently.

A partially withdrawn Bump Key positions the small peaks (between key cuts) just in front of each of the bottom pins. A quick striking action against the head (bow) of the Bump Key forces the key inward into the keyway. The surfaces of the peaks strike each of the bottom pins simultaneously which causes the pins to move. Because the

pins are contained within the pin chambers they cannot move to the back of the lock, but must instead move upward. Like the action with the pick gun, the bottom pins strike the top pins. The bottom pins will then stop moving and the top pins will be propelled upward. While the gap between top and bottom pins is present at the shear line, the Bump Key is rotated and the plug can turn.

Earlier, I mentioned that Bump Keys are cut to the deepest depth increment of the particular brand of lock. There are a few disagreements among practitioners of Bump Key picking as to the precise manner of key preparation. I have personally tried a few variations in actual cut configuration with similar rates of picking success. I imagine that there exists an ideal (and superior) pattern and configuration to optimize your ability to successfully pick locks with Bump Keys. Up to now, I haven't done sufficient research to say absolutely that one method is vastly superior to another, but I'll explain a number of variations I have tried.

Bump Key Preparation

The very first method of preparation that I learned was to just cut all cut positions to the deepest depth used by that particular brand of lock. Technically, it is possible to make a Bump Key with all #8 depths rather than #9 depths, and still successfully pick locks with it. The limitation is that a lock containing at least one #9 bottom pin would be impossible to open with that version of a Bump Key, because



1. A small sampling of Bump Keys



2. Kwikset Bump Keys.



3. A Kwikset lock, a Kwikset Bump Key, an Allen wrench and 4-in-1 screwdriver.

the #8 depth of cut would always force the #9 pin into the path of the shear line. Locks with #8 size bottom pins or shorter would work with the shallower version Bump Key.

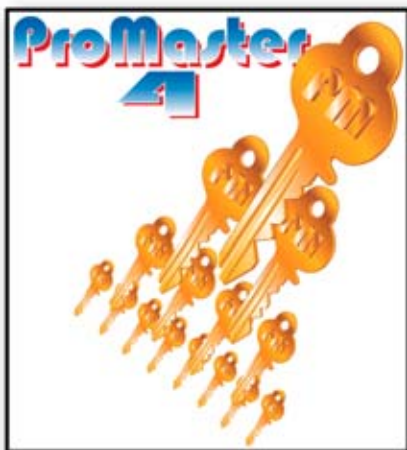
To give you a chance at picking a lock with any pin configuration, it is generally

recommended to cut each position to the deepest depth used for that brand. Some locksmiths actually prefer to cut the key a bit deeper than the deepest recognized depth for good measure. Over the years, I have prepared keys to exact deepest depth and other times slightly deeper, with similar results. Most recently, I've typically cut Bump Keys about ? increment more than that deepest recognized depth.

Another variation involves the tip of the key. On a 5-cut key, it is probably more typical to see a Bump Key with five cuts. In more recent times, I will generally add one additional cut at the tip end of the key to cause the peak at the tip to be identical in size and profile to the peaks in between the other cut positions. In *photograph 2*, there are two differently configured Kwikset Bump Keys. On the bottom (after-market KW1 key), the key tip has a much larger peak than peaks found between the other cut positions. There doesn't seem to be any space for a sixth cut on that key, and strictly speaking there really isn't a sixth space position. The key on top (Kwikset original key) has the sixth cut. If you look closely, you'll see that it isn't a full-fledged cut space. It does, however, alter the tip to match the peak shape and size found in the other positions.

Bump Key Tools and Techniques

Outside the actual Bump Key, you will need at least one other tool or accessory to actually use the process to pick locks. That item will be something that you can use to hit the Bump Key.



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4. Fully insert the Bump Key.



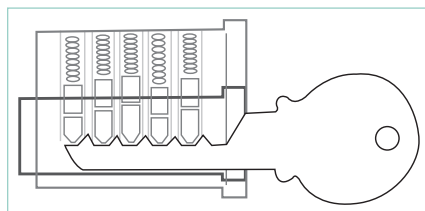
5. Grasp the head of the key and draw it back.



6. Screwdriver tip turns the key.



7. Allen wrench turning the key.



A. Interior of a lock cylinder with a partially withdrawn Bump Key.

Let me tell you in advance that you don't want to use a hammer or any other object of substantial heft or weight.

Photograph 3, shows a Kwikset residential knob lock, a Kwikset Bump Key, an Allen wrench and a somewhat dismembered 4-in-1 screwdriver. I will explain the basic procedures and show how I use the various items in the picture to pick that lock with that Bump Key. When I explain the process, you will get some idea as to other tools/devices that you might use with a Bump Key to pick a lock. I normally have at least one Bump Key with me at any time, and over the years (depending on the circumstances) have used a variety of devices to assist me.

I mentioned earlier that the Bump Key must be in a partially withdrawn position so that the peaks can be positioned just in front of each bottom pin. Rather than guessing, I will typically start out by fully inserting the Bump Key, shown in *photograph 4*. Then I grasp the head of the key, and draw it back one notch position. (See *photograph 5*.) You should be able to feel a kind of clicking sensation when all the bottom pins fall into the flat spots between the peaks.

Illustration A, illustrates the interior of a lock cylinder with a partially withdrawn Bump Key in it. The key is cut deep enough so that the full length of all the bottom pins can be contained within the plug and not be forced into the path of the shear line. On their own, bottom pins can only drop so far into the plug because of the depth of the holes drilled for the lower pin chamber. The Bump Keys should not be cut so deep that the height of the peaks is physically below the bottom surfaces of the fully descended bottom pins. The peaks should be in a path to directly strike the lower surfaces of the bottom pins.

The next part is where the touch and picking technique come into play. Before striking the Bump Key, you must apply very slight rotational force and be prepared to turn the Bump Key when the pins have been struck and the shear line is unobstructed. Here is where the technique resembles picking

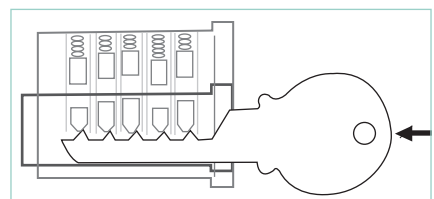
with a pick gun. It is almost a timing move to determine when to apply turning force. If you turn too early, you will bind the pins and not strike them cleanly with the Bump Key peaks. If you wait too long to turn, the pins will have already separated and dropped back into place.

If you can't strike the head of the key accurately, you will also have considerable difficulty. You may either smack the heck out of your fingertips or hamper your grip on the head of the key and mess up your rotation timing.

I have on occasions used some tool or other object in the key ring hole to apply the turning pressure, rather than directly grasping the bow of the key with my fingertips. Sometimes it is easier to accurately hit the head of the key when my fingers are slightly out of the strike zone. In *photograph 6*, I am using one of the screwdriver tips to turn the key. *Photograph 7*, shows a similar action using an Allen wrench. Whatever you happen to use when you apply turning pressure, make sure you have an adequate feel for the level of force used. Do not over-torque.

There is no way to accurately explain or illustrate the amount of force applied in *photograph 8*, but I am applying very light rotational pressure with my left hand gripping the outside edges of the Bump Key's bow. It is about as much force as I would use with a turning tool while using a pick gun. The primary tool I use to strike the Bump Key is the plastic handle of a screwdriver. I typically use the disconnected handle of my 4-in-1 screwdriver. I prefer to use an object that is made of a fairly heavy weight plastic. I don't care to use metal objects, especially not hammers.

The striking force should be abrupt and solid. *Illustration B*, shows internally what is supposed to happen. The arrow indicates the direct force against the head of the key. The peaks quickly bump all the bottom pins at once, and the chain reaction causes the top pins to propel upward causing a separation at the shear line. I can almost hear the difference in tone between a successful hit and an unsuccessful one. When I pick successfully, it seems to have a ring about it. When I fail, it seems to sound like a dull thud. When my technique is near perfect, I don't even detect any (intentional) increase in rotational force when the shear line is unobstructed. The plug just rotates and I feel my hand slip off as the key turns.



B. Internally what is supposed to happen.



8. Apply very light rotational pressure.

Photograph 9, shows the key all the way into the keyway and the plug partially rotated. There are quite a few important "minor" details that have to fall into place to successfully pick a lock with a Bump Key. When you get the technique down pat, it tends to happen as a natural motion without necessarily having a conscious recognition of all the individual details. Even when you know what you are doing, you still have bad days or moments as with any other picking technique. There will be times that I will try repeatedly with absolutely no success, and I won't be able to figure



9. The plug partially rotated.

out what I'm doing wrong. Other times I will be so "on" that I will rapid fire strike over and over with every hit being a successfully picked lock. I find it even more difficult figuring that one out.

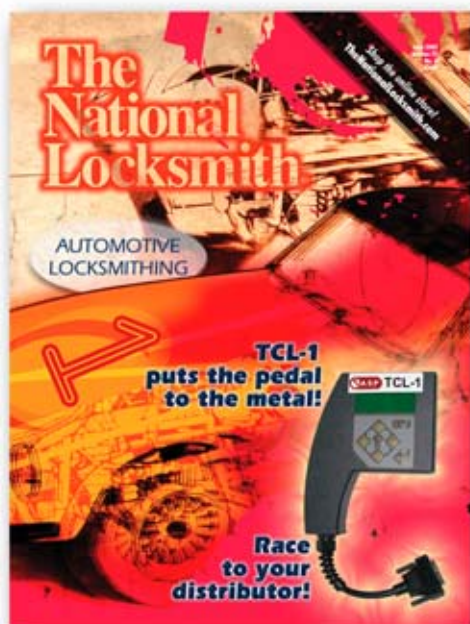
Once you understand the basic concepts, you will not automatically become expert in this technique. Experimentation, practice and persistence will be your best hope if you have limited success at first try. Practice and persistence done on the same lock, whether you are picking successfully or not, will tend to leave a bit of an indentation on the face of the plug, as shown in *photograph 10*. That was done with just a plastic handle (many dozens of times, of course),



10. An indentation on the face of the plug.

and that's why I would not dare attempt it with a hammer or anything similar. Plus, if you hit your fingers, it will hurt a lot more.

If you think that you and other locksmiths in your area might benefit more by direct instruction, you may want to convey that to your local locksmith association and find someone to put on a class. If they can't find someone local, have them contact me and I'll consider the possibility of conducting the class, depending on my schedule. You can look for any updates or corrections of my various technical articles at my web page, <http://home.earthlink.net/~lockwriter>. Look under the link at "Tech Article Addendum". **TNL**



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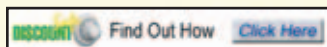
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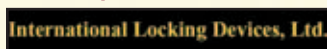
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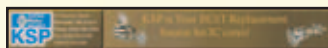
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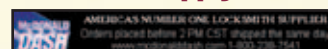
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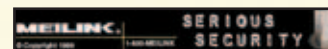
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INTRODUCTION:

In Eastern New York State, in the little town of Hudson, the headquarters of KEYSURE can be found. What is KEYSURE? It could be one of the best kept secrets in the industry. Let me tell you a little about the product and the KEYSURE system.

PRODUCT:

KEYSURE is a very reliable, simple and efficient way to control access to keys or other sensitive items like key cards or safe combinations. The system simply consists of individual "KeyController" key boxes, numbered key tags and a wall or drawer-style cabinet to house the key boxes.

FEATURES:

The KeyController is a simple, pilfer-proof, tamper-evident, two-part container that snaps together to encapsulate individual keys or other small items. Once closed, the container must be physically broken to gain access to whatever is inside.

The tamper proof key container, prevents a key from being handled or copied. Available in clear or blue, the blue can be used to prevent anyone from reading the key or seeing what is inside the key controller.

INSTALLATION PROCEDURE:

The KEYSURE key control system recommends nine steps to secure and control the key system.

1. Coding: The KEYSURE system is based on a consecutive numbering system. These numbers then become the code number for each apartment unit.

2. Master code list: Use the tenant list or rent roll and consecutively number it. This is now the master code list.

3. Key tags: Put a key tag on each key.

4. Applying code numbers: Number the outside of the KeyController container with the same number that is on the key tag.

5. Signatures: The tenant signs both inside surfaces where indicated. The signatures are on the inside so no one can see them.

6. Closing the KeyController: After the signatures are applied and the key is placed inside, close the container with a squeezing action until a snap is heard. A visual inspection of the edge of the case will confirm the case is fully closed at all four corners. Once closed, the KeyController will have to be broken to gain access to the key.

7. Mother's maiden name: The tenants, mother's maiden name, can be signed on the outside of the KeyController to allow the tenant to identify the box without having their own name on the outside. It also serves to confuse anyone with criminal intent.

8. Storage: Load the KeyController in an appropriate container, keeping them in numerical order. Audit the key boxes on a scheduled basis to insure that they are all there and in order.

9. Security policy: There should be a written security policy and it should be distributed to all of the tenants so they will know what is happening and why.

PRICE:

The retail price for each KeyController is \$5.95 with a wholesale price of \$3.60. The cabinet and key tags will vary depending on size, style and quantity.



CONCLUSION:

If used properly, the KEYSURE key control system will allow a building manager the availability of a key for each apartment, while providing the manager with a means of proving to the tenant that that key has not been used.

Contact Information:

KEYSURE can be contacted at 1-800-803-7308 or 1-518-828-5337. Their address is P.O. Box 362, Hudson, New York 12534. Web: www.keysure.net; E-mail: keysure@taconic.net

TNL

IN SUMMARY:

DESCRIPTION: Tamper proof key container that must be broken to gain access.

PRICE: Locksmith cost is \$3.60 with a retail price of \$5.95.

COMMENTS: Signatures on the inside of the key controller prevents switching boxes.

TEST DRIVE RESULTS: It is impossible to tamper with without visual signs. When used as a key control system, protects both tenants and building employees.